UNDERGRADUATE & GRADUA

Academic Catalog

2014-2016

Purdue University Calumet
2014-15 Academic Catalog
Course Description

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Course Descriptions

Purdue University Calumet's Course Descriptions are now available on-line at www.purduecal.edu. (See directions below) This on-line search will allows users to select a term and search using a subject code. Searches can be customized further by selecting a level (Graduate/Undergraduate), School and Course Attribute.

Course numbered 10000-49999 are primarily for undergraduate students. Courses numbered 50000-59999 are for undergraduate (usually juniors and seniors) and graduate students. Course numbered 60000-69999 and above are for graduate students only.

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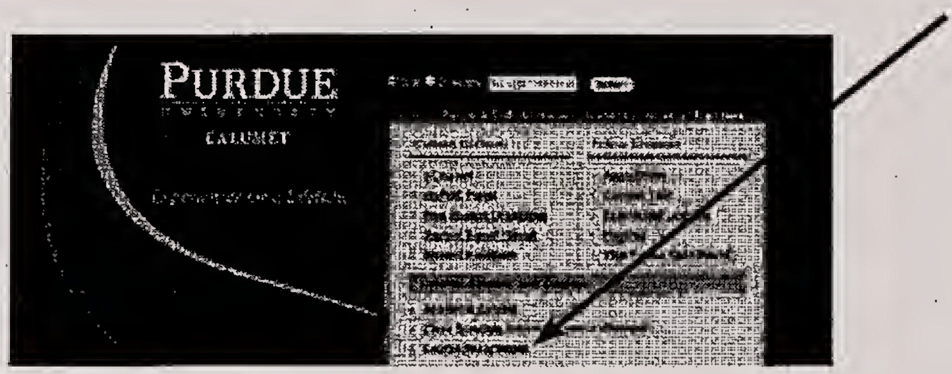

- *Go to www.purduecal.edu and hover over "Students" in the top menu bar.*
- *Click on "Course Descriptions"*
- *Select a Catalog Term, click Submit*
- *Select Subject Code from the drop down list, click on "Get Courses"*
- *Enhance the search by selecting additional criteria such as School and Attribute*

SUBJ. CODE	DESCRIPTION
A&AE	Aeronautical & Astronautical Engineering
A&D	Art & Design
ANSC	Animal Science
ANTH	Anthroplogy
ARAB	Arabic
ARET	Architectural Technology
ASTR	Astronomy
BA	Business Administration
BHS	Behavioral Sciences
BIOL	Biology
CE	Civil Engineering
CS	Computer Science
CDFS	Child Development and Family Studies
CET	Civil Engineering Technology
CGT	Computer Graphics Technology
CHM	Chemistry
CHNS	Chinese
CIS	Computer Information Sytems
CMET	Construction Management Engineering Technnology
COM	Communication
EAS	Earth, Atmospheric Sciences
ECE	Electrical, Computer Engineering
ECET	Electrical, Computer Engineering Technology
ECON	Economics
EDCI	Education, Curriculum and Instruction
EDFA	Educational Foundations and Administration
EDPS	Education and Professional Studies
ENE	Engineering Education
ENGL	English
ENGR	Engineering
ENTR	Entrepreneurship
EQU	Equine Management
ET	Engineering Technology
ETHN	Ethnic Studies
F&N	Foods and Nutrition
FLL	Foreign Languages and Literatures
FM	Fitness Management
FR	French
GEOG	Geography
GER	German
GNS	General Studies
GRAD	Graduate Studies
GREK	Greek
HEBR	Hebrew
HIST	History
HONR	Honors
HORT	Horticulture
HSCI	Health Sciences
HTM	Hospitality and Tourism Management
IDIS	Interdisciplinary Studies
IE	Industrial Engineering
IET	Industrial Engineering Technology
IT	Industrial Technology
ITAL	Italian
ITS	Information Technology Systems
JPNS	Japanese
LAS	Latin American Studies
LTHN	Lithuanian
MA	Mathematics
ME	Mechanical Engineering
MET	Mechanical Engineering Technology
MGMT	Management
MSE	Materials Engineering
MILT	Military Service
MSL	Military Science and Leadership
MUS	Music History and Theory
NRES	Natural Resources and Environmental Sciences
NUR	Nursing
OBHR	Organizational Behavior
OLS	Organizational Leadership and Supervision
PHIL	Philosophy
PHYS	Physics
PLSH	Polish
POL	Political Science
PSY	Psychology
PTGS	Portuguese
RUSS	Russian
SCI	Science
SERV	Service Learning
SOC	Sociology
SPAN	Spanish
SRCT	Serbo-Croatian
STAT	Statistics
SWAH	Swahili
TECH	Technology
THTR	Theater
URDU	Urdu
WOST	Women's Studies

Purdue University Calumet
Master Course Descriptions

Date Printed : Aug 13, 2015

AAE 53900

Class:3 Lab:0 Credit:3

AAE 54700

Class:2 Lab:3 Credit:3

AAE 60700

Class:3 Lab:0 Credit:3

AAE 62600

Class:3 Lab:0 Credit:3

ACC 12000 Principles Of Accounting I

Class:3 Lab:0 Credit:3

A basic introduction to accounting practices, financial statements, and the accounting cycle in various forms of business organizations. Emphasis is on the accounting of assets, liabilities and owners of equity. This course is not open to Management majors.

ACC 12100 Principles of Accounting II

Class:3 Lab:0 Credit:3

A continuation of ACC 12000. Emphasis is on reporting issues including financial and cash flow statements.

Prereqs: (BA 12000 with min grade of C OR ACC 12000 with min grade of C) AND (BA 10500 with min grade of C OR BUSM 10500 with min grade of C)

ACC 20000 Introductory Accounting

Class:2-3 Lab:0-2 Credit:3

Attributes: TransferIN

An examination of the system by which accounting data is gathered from economic events. Construction and uses of financial statements.

Prereqs: MA 15300 with min grade of C

ACC 20100 Management Accounting I

Class:3 Lab:0 Credit:3

Attributes: TransferIN

An introduction to management's internal use of accounting information for decision making, production management, product costing, motivating and evaluating performance and budgeting.

Prereqs: MA 15300 with min grade of C AND (ACC 20000 with min grade of C OR MGMT 20000 with min grade of C)

ACC 30900 Accounting Information Systems

Class:3 Lab:0 Credit:3

The course emphasizes accounting information systems, transaction cycles, and communication of financial information for management decisions within the context of business. Topics may include ERP systems, e-business and electronic commerce, systems documentation, database management, internal control, management reporting and projects using business software.

Prereqs: MGMT 20100 with min grade of C OR ACC 20100 with min grade of C

ACC 35000 Intermediate Accounting I

Class:3 Lab:0 Credit:3

Financial reporting for interested external parties. Emphasis on asset valuation, income measurement, and preparation of financial statements, and on appreciation of discretion available to preparers.

Prereqs: MGMT 20100 with min grade of C OR ACC 20100 with min grade of C

ACC 35100 Intermediate Accounting II

Class:3 Lab:0 Credit:3

Continuation of Intermediate Accounting I. An examination of additional problems in financial reporting, including long-term assets, liabilities, owners equity, income taxes, earnings per share, leases, and pensions.

Prereqs: MGMT 35000 with min grade of C OR ACC 35000 with min grade of C

ACC 40200 Financial Statements Analysis

Class:3 Lab:0 Credit:3

Financial statement analysis is the application of analytical tools and techniques to general-purpose financial statements and related data to derive estimates and inferences useful in business analysis. The goal of this course is to develop your ability to use financial statement information and related disclosures. A firm's financial statements are generally the best sourses of financial information about the firm financial statements tell a stofy and our goal is to learn how to understand and interpret the story.

Prereqs: ACC 35100 with min grade of C OR MGMT 35100 with min grade of C OR MGMT 34000 with min grade of C OR FIN 34000 with min grade of C

ACC 40301 Accounting Field Experience

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Cultural Immersion

This course provides an experiential learning experience while students learn about the International Financial Reporting Standards (IFRS) which are being used in more than 100 other countries and are being considered by the USA. Permission of department required.

ACC 40400 Tax Accounting

Class:3 Lab:0 Credit:3

A foundation course in the law governing taxation of individuals, partnerships, corporations, and property transactions. Tax planning and professional responsibility are also emphasized.

Prereqs: MGMT 35000 with min grade of C OR ACC 35000 with min grade of C

ACC 40600 Auditing

Class:3 Lab:0 Credit:3

An introduction to the concepts and procedures of auditing, which is the systematic process of objectively obtaining and evaluating evidence about economic actions and events with regard to audit risk, materiality, and decision-making. Independent, governmental, internal, and international audit topics may also be addressed.

Prereqs: (MGMT 35100 with min grade of C OR ACC 35100 with min grade of C) AND (MGMT 30900 with min grade of C OR ACC 30900 with min grade of C)

ACC 40700 Cost Accounting

Class:3 Lab:0 Credit:3

This course emphasizes the application of cost management concept for the purpose of facilitating managerial decision making and control. Topics include cost methods, cost analysis for decision making, budgeting, performance evaluation, financial planning.

Prereqs: MGMT 20100 with min grade of C OR ACC 20100 with min grade of C

ACC 40800 Government Accounting

Class:3 Lab:0 Credit:3

This course examines the accounting requirements of the three major activities of state and local government: governmental activities; business activities; and fiduciary activities. Fund accounting and treatment of capital assets and long-term liabilities in governmmental systems will be examined as well as the contents of a Comprehensive Annual Financial Report (CAFR).

Prereqs: MGMT 35000 with min grade of C OR ACC 35000 with min grade of C

ACC 41000 Advanced Financial Accounting

Class:2 Lab:2 Credit:3

This is the advanced course in financial accounting. A range of contemporary topics in financial reporting such as business combinations and consolidations, foreign transactions, partnerships, governmental and not-for-profit accounting are covered.

Prereqs: MGMT 35100 with min grade of C OR ACC 35100 with min grade of C

ACC 49500 Internship in Accounting

Class:1-4 Lab:0 Credit:1-4

Attributes: Experiential Learning, ExL-Internship, Variable Title is a special course in selected areas of accounting, designated to provide practical field experience under professional supervision in selected situations related to the student's area of specialization.

ACC 49900 Undergraduate Research in Accounting

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Students will work with a faculty member on a research project in their major. They will contributes to the ongoing research while learning current research techniques in management. During this process the student will develop critical thinking and oral and written communication skills.

AD 10500 Design I

Class:0 Lab:6 Credit:3
Two-dimensional design fundamentals: concepts and processes. Studio problems are used to introduce design concepts, vocabulary, and skills applicable to continued study in a variety of visual disciplines. Includes introduction to a variety of two-dimensional media and computer applications.

AD 10600 Design II

Class:0 Lab:6 Credit:3
Three-dimensional fundamentals: concepts and processes. Studio problems introduce design concepts, vocabulary, and construction skills applicable to continued study in a variety of visual disciplines. Includes introduction to a variety of 3-D media and 3-D computer graphics concepts.

AD 11200 Graphic Arts I: Typography

Class:2 Lab:2 Credit:3
Students investigate mechanics of type, using both type and letter forms in a variety of design applications. Students will also experiment with typographic composition, contrast, text, and value in combination with language.

AD 11300 Basic Drawing

Class:0 Lab:6 Credit:3
Attributes: TransferIN
An introduction to drawing and sketching as a means of communication of ideas.

AD 11400 Drawing II

Class:0 Lab:6 Credit:3
Continuation of A&D 11300; emphasis is given to the exploration of a variety of media and the structuring of pictorial space.
Prereqs: AD 11300 with min grade of C

AD 14000 Entrepreneurship in Art and Design

Class:3 Lab:0 Credit:3
Basic business skills are surveyed and case studies of successful self-employed artisits and entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for converting artistic and design skills into self-employment and entrepreneurship.

AD 20300 Art Activities For Elementary Teachers

Class:1 Lab:2 Credit:2
An undergraduate course designed to assist the student in gaining basic skills in art media and method as a beginning classroom teacher. This exposure to the basic art program should provide a stimulating, enrichment art program for the classroom.

AD 20400 Graphic Arts II: Digital Imaging

Class:2 Lab:2 Credit:3
This course introduces the computer as a powerful tool for manipulating and creating images. Students are encouraged to use their own photography and develop their own styles. Adobe Photoshop software package is the primary image processing program used to digitally enhance, alter and retouch images. Electronic layout and typographical issues are discussed, and a page layout program is introduced to combine text with image.

AD 22200 Introduction to Photography

Class:2 Lab:2 Credit:3

This course presents a study of basic photographic technique from a practical and artistic point of view. Students will be presented with the opportunity to develop aesthetic and compositional skills while building a portfolio of significant images. A 35mm camera with adjustable controls or a digital camera is required.

AD 25500 Art Appreciation

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN

Understanding and appreciation of the origins and growth of art. A trip to a major museum is included in the course.

AD 29000 Special Topics in Art and Design

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Topic will vary.

AD 30102 Color and Composition

Class:0 Lab:6 Credit:3

The study of color theory and compositional systems. Additive and subtractive color, disucssions of color and its relationship to composition, through harmony and contrast, will be explored.

AD 32800 Visual Communication Design I

Class:0 Lab:6 Credit:3

A course designed to introduce creative problem-solving with emphasis on 2-D solution to conceptual problems in the areas of publication and promotional graphics using word, image and layout.

AD 32900 Visual Communication Design II

Class:0 Lab:6 Credit:3

A course designed to include continuation of translation of concept into form with emphasis on corporate visual identity system.

Prereqs: AD 32800 with min grade of C

AD 39200 Special Topics in Art

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Topics will vary.

AD 40300 Portfolio Process and Presentation

Class:2 Lab:2 Credit:3

The process of organizing, editing, and packaging work in a cohesive system will be illustrated in lecture, individualized studio projects, and on-site portfolio reviews. The course will focus on presentation as well as the building of the portfolio and students will participate in discussions, critiques, resume preparation, and mock interviews. Copyright issues and ownership of work will also be discussed.

AD 44800 Visual Communication Design III

Class:0 Lab:6 Credit:3

A course designed to introduce advanced design problems with emphasis on individual development and exploration of contemporary design issues. The study of surface design for packaging graphics will be introduced as well.

Prereqs: AD 32900 with min grade of C

AD 44900 Visual Communication Design IV

Class:0 Lab:6 Credit:3

A course designed to introduce graphic problem solving in the commercial environment; advanced production techniques for the visual communication designer. Field trips may be required.

Prereqs: AD 44800 with min grade of C

AD 49100 Special Topics in Art

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
Topics will vary.

AD 59000 Special Art Problems

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title
Consent of the instructor and the head of the department required. Individual problems in art history, appreciation, design, crafts, drawing, and painting. Credit dependent upon amount of work done.

ANSC 10100 Animal Agriculture

Class:3 Lab:0 Credit:3
Importance of livestock in the field of agriculture and the place of meats and other animal products in the human diet.

ANSC 22100 Principles of Animal Nutrition

Class:3 Lab:0 Credit:3
A study of the digestive processes, composition of feedstuffs, nutritional requirements, and formulation of practical rations for farm animals.
Prereqs: CHM 11500 with min grade of D-

ANTH 10500 Introduction To Cultural Anthropology

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education
An introduction to the science of man and his works. Emphasis on the nature of culture and culture change; relationship of culture and personality. Attention given to the variations with the Universal institutions of man: language, technology, the family, systems of social control, economics, warfare, religion, art, and values. Processes of invention, diffusion and acculturation; theoretical interpretations of the direction and process of cultural development.

ANTH 20400 Introduction To Biological Anthropology And Human Evolution

Class:3 Lab:0 Credit:3
This course surveys biological anthropology through a review of evolutionary theory and genetics, the fossil evidence for current theories in human evolution with insight from modern non-human primates, and the influences of environmental stressors on modern human biological variations.

ANTH 34100 Culture and Personality

Class:3 Lab:0 Credit:3
Three hours of anthropology, sociology, child development or psychology, or equivalent. A cross-cultural survey stressing differing basic personality types and the process by which adult personality is acquired. Case studies of selected nonwestern cultures will be used to provide comparative perspective. (Not open to students with credit in Soc 34100).

ANTH 37900 Native American Cultures

Class:3 Lab:0 Credit:3
General survey of Native cultures of the Americans. Topics to be covered include prehistory, language, religion, aesthetics, culture contact and change, contemporary issues, and social, economic and political organization.

ANTH 41400 Introduction To Language And Culture

Class:3 Lab:0 Credit:3
This course introduces undergraduate students to the anthropological view of language. Communication systems of other animals will be discussed to highlight the importance of language in the development of culture. Various theories of language and the diversity of language will be investigated. The anthropologist's view of language structure, linguistic change, and writing systems will be presented. There will be a strong emphasis on the relation of language to other aspects of culture. Non-Indo-European languages will be compared to American English throughout the course.
Prereqs: ANTH 10500 with min grade of D-

ANTH 50500

Class:3 Lab:0 Credit:3

ANTH 50700
Class:3 Lab:0 Credit:3

ANTH 51400
Class:3 Lab:0 Credit:3

ANTH 59000 Individual Research Problems
Class:0 Lab:0 Credit:1-3
Attributes: Variable Title
Individual research or reading in an area of anthropology under an anthropologist staff member. Does not include thesis work.

ARAB 10100 Arabic Level I
Class:3 Lab:1 Credit:3
Introduction to the basic skills in the language.

ARAB 10200 Arabic 102. Level II
Class:3 Lab:1 Credit:3
This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community. Prerequisite: Arab 10100.
Prereqs: ARAB 10100 with min grade of D-

ARET 11600
Class:0 Lab:6 Credit:2

ARET 11700 Construction Drafting and CAD
Class:1 Lab:5 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
Introduction to drafting fundamentals with emphasis on architectural and civil engineering topics. Develop basic drafting skills, using orthographic projections, auxiliary views and perspectives. Students will be introduced to the fundamentals of CAD.

ARET 11800
Class:0 Lab:6 Credit:2

ARET 17000 Materials & Systems of Construction
Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
An introduction to the nature of the construction industry and a survey of the most commonly used construction materials with special emphasis on their properties characteristics, limitations and applications into different construction elements and systems such as foundations columns, trusses, arches, frames, etc. Guest speakers will discuss the nature and opportunities within the construction industry.

ARET 20400
Class:2 Lab:0 Credit:2

ARET 22000
Class:0 Lab:6 Credit:2

ARET 22200 Architectural Construction II
Class:0 Lab:6-9 Credit:3
Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building.
Prereqs: ARET 11700 with min grade of C

ARET 22400
Class:0 Lab:6-9 Credit:3

ARET 25000 Architectural Construction I
Class:1 Lab:5 Credit:3

Attributes: Experiential Learning, ExL-Service Learning
A study of wood frame construction through a semester project requiring planning, preliminary and working drawings, and laboratory experience in wood framing. Field trips may be included.
Prereqs: ARET 11700 with min grade of C

ARET 27600 Specifications And Contract Documents

Class:3 Lab:0 Credit:3
Analyze the content and organization of specifications and how they relate to working drawings during construction. A study of the various types of contract documents used for construction.
Prereqs: ARET 25000 with min grade of C OR CET 20800 with min grade of C

ARET 28300 Mechanical And Electrical Equipment For Buildings

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
A survey of basic environmental systems, including heating ventilating, air conditioning, plumbing, lighting and electrical equipment. A discussion of standard design parameters including an introduction to heat loss and heat gain calculations and circuit loads. Emphasis is placed on definitions, types of systems and the physical characteristics of equipment.

ARET 29900 Architectural Engineering Technology

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Hours and subject matter to be arranged with staff. (Course may be repeated for credit up to nine hours.)

ARET 31100

Class:3 Lab:0 Credit:3

ARET 31200 History of Architecture II

Class:3 Lab:0 Credit:3
Not open to students with credit in HIST 31600. The study of western architecture of the eighteenth, nineteenth, and twentieth centuries with an emphasis on the related structural, technological, socioeconomic and cultural influences that caused the architectural expressions of these periods.

ARET 34200

Class:1 Lab:5 Credit:3

ARET 36000

Class:2 Lab:3 Credit:3

ARET 36200

Class:1 Lab:6 Credit:3

ARET 42500 Solar Construction

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
A study of building orientation, energy conservation principles, insulation, and a survey of passive and active solar energy systems. An investigation of building materials and systems of construction as they relate to passive solar energy systems.

ARET 46000

Class:3 Lab:0 Credit:3

ARET 49000

Class:0-6 Lab:0 Credit:1-6

ARET 49900 Architectural Technology

Class:1-4 Lab:0-6 Credit:1-6
Attributes: Variable Title
Hours, subject matter and credit to be arranged with staff. Course may be repeated for credit up to nine hours.

ASTR 26300 Descriptive Astronomy: The Solar System

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
Not available to students with credit in ASTR 36300. A descriptive, largely non-mathematical course in astronomy intended for non-science majors. Topics include: description of the sky; historical development of astronomy; motion of the sun and moon; solar and lunar eclipses; the seasons and the calendar; the sun and the planetary system; comets, meteoroids, and asteroids. Includes required observing sessions.

ASTR 26400 Descriptive Astronomy: Stars and Galaxies

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
Not available to students with credit in ASTR 36400. A descriptive, nonmathematical course in astronomy intended for non-science majors. Topics include: properties of stars; stellar birth and death; the Hertzsprung-Russel diagram; main sequence stars; binary systems; stellar clusters; red giants and white dwarfs; nova and supernova; neutron stars and black holes; galaxies and the cosmological red shift. Required observing sessions.

ASTR 26500 Descriptive Astronomy: Astronomical Origins

Class:2 Lab:2 Credit:3
ASTR 26500 is a largely non-mathematical course in astronomy intended for non-science majors. Topics will include ancient ideas about the origin of the Universe, cosmology, formation of Solar Systems, and the formation and evolution of life elsewhere in the Universe.

ASTR 36300 The Solar System

Class:3 Lab:0 Credit:3
This course is intended for students in science or engineering. The components of the course consist of an overview of solar system objects and an overview of the physical processes that control the evolution of solar system objects since formation. The overview of solar system includes observations of the Sun, planets, asteroids and Kuiper-belt objects, comets, and interplanetary dust. Specific processes that are discussed include hydrostatic equilibrium, orbital dynamics, radioactive decay, and heat flow. The role of these processes in shaping planetary surfaces and atmosphere is explored.
Prereqs: MA 16400 with min grade of D- OR PHYS 15200 with min grade of D- OR PHYS 22000 with min grade of D-

ASTR 36400 Stars And Galaxies.

Class:3 Lab:0 Credit:3
This course is intended for students in science or engineering. This is the second of a two-semester introductory sequence on astronomy and astrophysics, although it is designed to be a stand-alone course. It is intended mainly for Science and Engineering majors who are comfortable with calculus-based contents. This course provides an overview on the formation and evolution of stars galaxies and clusters of galaxies. Selected topics that are covered in more detail include stellar structure and atmosphere, properties of black holes, neutron stars, and white dwarfs, galactic dynamics, and dark matter in galaxies and clusters of galaxies.
Prereqs: MA 16400 with min grade of D OR PHYS 15200 with min grade of D OR PHYS 22000 with min grade of D

BA 39000 Topics in Business

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
An opportunity to investigate and study particular problems and topics in the field of business.

BA 49000 Problems in Business

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Topics selected for enrichment and further study in special areas of business.

BHS 10300 Freshman Experience in Behavioral Sciences

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
This interdisciplinary course provides entering first-year students and transfer students with less than 60 credits an opportunity to become familiar with campus resources, academic life management, and discipline specific career exploration.

BHS 20100 Statistical Methods For The Behavioral Sciences

Class:3 Lab:0 Credit:3
Working knowledge of high school algebra required. Not open to students with credit in PSY 50000. An introduction to descriptive and inferential statistics as applied to the behavioral sciences.

BHS 20600 Infant and Toddler Supervised Experience

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Practicum
Directed in-service teaching for infant and toddler settings. Course will focus on all aspects of planning and guidance of infants and toddlers, addressing overall curriculum, development and observational assessment.
Prereqs: BHS 22800 with min grade of D- AND CDFS 21000 with min grade of D-

BHS 29000 Topics in Behavioral Sciences

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
Variable credit, variable title course for group or individual study.

BHS 48600 Seminar in Human Development and Disability

Class:2 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Practicum
The Seminar on Human Development and Disability will expose students to multiple perspectives related to the issues in human development and disability related issues. The purpose of the course is to provide an interdisciplinary experience for students preparing for work in the human services specifically with individuals with disability. Students will participate in a seminar originating at Riley Child Development Center at the Indiana University School of Medicine. Students will participate in seminar preparations provided by pediatricians, psychologists, psychiatrists, social workers, special educators, and occupational therapists. Students will also gain experience in critiquing disability related research in the context of guided class discussion.

BHS 49000 Undergraduate Special Topics

Class:0-6 Lab:0-4 Credit:0-6
Attributes: Variable Title
Individual or group participation in supervised reading, laboratory experiences, field experiences or research in special areas of human development and family studies.

BIOL 10008 Foundations of Biology

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Wellness Education, Gen Ed-Scientific, General Education, Lab Science
An introduction to core concepts in biology and basic laboratory skills used in the biological sciences.

BIOL 10010 Preparation for Introductory Biology

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Wellness Education, Gen Ed-Scientific, General Education
An introduction to core concepts in biology and basic laboratory skills in biological sciences.

BIOL 10100 Introductory Biology

Class:3 Lab:3 Credit:4
Attributes: Gen Ed-Natural Science, Gen Ed-Wellness Education, Gen Ed-Scientific, Gen Ed-Wellness, General Education, Lab Science, TransferIN
Note: MA 15300 can be taken before or during the same semester as BIOL 10100. Introduction to Life Science for Science Majors. Molecular and cellular biology, basic chemistry, cell structure and physiology, cell division, genetics and development. Laboratories include illustration of basic concepts with emphasis on data collection and interpretation.
Prereqs: MA 15300 with min grade of C-

BIOL 10200 Introductory Biology

Class:3 Lab:3 Credit:4
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN

Continuation of BIOL 10100. Biology of organisms and populations. Morphology, physiology, and systematics of organisms, evolution, ecology and behavioral biology. Laboratories include survey of representative taxa.
Prereqs: MA 15300 with min grade of D OR BIOL 10100 with min grade of D

BIOL 10700 Freshman Experience in Biological Sciences

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, General Education
The course consists of lectures by faculty and guest speakers, presentations by students and class discussion. Students in this course will become familiarized with the diverse fields of biological sciences and gain knowledge and skill for literature search, critical thinking, problem solving, and oral and written communications.

BIOL 17500 Flora of Calumet Region

Class:2 Lab:2 Credit:3
Identification and recognition of the flora of the Calumet Region. The emphasis is on field that acquaints the student with the principle plant groups and species of the local flora. The course may not be used to fulfill the general science requirement.

BIOL 21000 Field Biology

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
It consists of a week-long workshop at an off-campus field site. Activities will include field identification of animals and plants, a series of lectures by the course instructor and local experts, trips to local natural areas, and class discussions at the workshop site. Topics may include, but are not limited to, basic ecological and evolutionary principles, environmental ethics, local geology and ecology, natural resource management, habitat restoration and conservation, land use and human impacts on the most fundamental ecological principles, and an appreciation of human connectedness to other living species and the non-living environment. This course is offered for non-biology majors. This course cannot be counted toward the BS degree in biology.

BIOL 21300 Human Anatomy and Physiology I

Class:3 Lab:3 Credit:4
Attributes: S TIERED SEATING - ANY, Gen Ed-Natural Science, Gen Ed-Wellness Education, Gen Ed-Scientific, Gen Ed-Wellness, General Education, Lab Science
An introduction to human anatomy and physiology. Topics include: the basic structural and functional organization of the human body, cellular anatomy and physiology, body tissues, the integument, and the skeletal, muscular and nervous systems. Lecture material is reinforced and expanded upon in laboratory studies of gross anatomy, histology and physiology. Prerequisite for students not yet admitted to a degree program: One semester, 3 credit hour, college level course in chemistry, biology or by permission of instructor. Suggested courses include: BIOL 12500, BIOL 10100 or CHM 119
Prereqs: BIOL 10100 with min grade of C- OR CHM 11900 with min grade of C-

BIOL 21400 Human Anatomy And Physiology II

Class:3 Lab:3 Credit:4
Attributes: S TIERED SEATING - ANY, Lab Science
A continuation of BIOL 21300. Topics include: structure and function of the special senses and the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproductive systems; basic hematology, fluid and electrolyte balance and acid-base balance. Lecture material is reinforced and expanded upon in laboratory studies of gross anatomy, histology, and physiology.
Prereqs: BIOL 21300 with min grade of C-

BIOL 22100 Introduction To Microbiology

Class:3 Lab:3 Credit:4
Attributes: Lab Science
Course prerequisite: One semester of general chemistry and one year life science. Course description: The isolation, growth structure, functioning, heredity, identification, classification, and ecology of microorganisms, their role in nature and significance to man.

BIOL 24300 Introductory Cell Biology

Class:3 Lab:3 Credit:4

Lecture emphasizes the unity of cellular processes among all living organisms. Topics covered include: molecular mechanisms regulating cellular activities involved in ion and solute transport; organelle biogenesis; protein trafficking and vesicular transport; structure and function of cell cytoskeleton; cell signaling, cycle and cycle control; and cancer biology. The laboratory complements lecture with experiments that incorporate procedures and techniques used in research, medical biotechnology, and pharmaceutical laboratories.

Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND CHM 11600 with min grade of D-

BIOL 24400 Genetics

Class:3 Lab:3 Credit:4

The study of genes and genomes with emphasis on data analysis and problem solving; topics include patterns of inheritance, the relationship of DNA and phenotype, genome structure and engineering, the nature of heritable changes, and genes in population.

Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND CHM 11600 with min grade of D-

BIOL 29500 Special Assignments

Class:0-99 Lab:0-99 Credit:0-99

Attributes: Variable Title

Reading, discussions, written reports or laboratory work selected for enrichment in special areas of the biological sciences.

BIOL 30700 Plant Physiology

Class:3 Lab:0 Credit:3

This is an intermediate-level course in plant biology. Understanding of basic concepts in biology are required. Topics may include but are not limited to plant cells, genome, gene expression, water transport, solute translocation, photosynthesis, carbohydrate, lipid & protein metabolisms, nutrient assimulation, plant growth, hormones, flowering & defense. Applications to agriculture, biotechnology, ecology, forestry, and other related areas will also be included.

Prereqs: BIOL 10100 with min grade of C- AND BIOL 10200 with min grade of C-

BIOL 31600 Basic Microbiology

Class:3 Lab:3 Credit:4

Attributes: Lab Science

One year general chemistry and one year general biology. A study of microbial structures, metabolism, genetics, classification, growth and control of growth, the role and significance of microbes to humans and the environment. Bacteria, fungi, protozoa and viruses are covered. Emphasis is on the bacteria.

Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND CHM 11500 with min grade of D- AND CHM 11600 with min grade of D-

BIOL 33000 Biostatistics

Class:3 Lab:0 Credit:3

Biological applications of statistical principles and procedures. Topics include basic concepts of statistics and probability, sampling and experimental design, data collection, and various analytical methods to analyze the data collected.

Prereqs: BIOL 10100 with min grade of D- OR BIOL 10200 with min grade of D-

BIOL 33300 Ecology

Class:3 Lab:3 Credit:4

Adaptations of living organisms to environment natural selection and evolution of species; ecological interactions at organism, population and community levels; dynamics of populations and communities; ecosystem structures and functions; and human impacts on ecosystems.

Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D-

BIOL 33900 Social Issues in Biology

Class:3 Lab:0 Credit:3

This course is required for biological science teaching majors only. Contemporary social issues in biology will be discussed in this course. Topics may include, but not limited to, religious conflicts of evolution, ethics of biological

research and practice, and issues of human nutrition, substance abuse, sex education, and family planning. Cannot be counted for biology elective credits.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D-

BIOL 34000 Human Physiology

Class:3 Lab:4 Credit:5
Attributes: Engr Tech Elective, Lab Science
A study of human physiology for students entering health oriented fields. The following systems will be examined: nervous, muscular, circulatory, respiratory, urinary, digestive, and endocrine. Emphasis on the relationship of function to structure at various levels of organization. Attention will be drawn to homeostatic mechanisms and intersystem interactions.
Prereqs: BIOL 21300 with min grade of D- AND BIOL 21400 with min grade of D- OR BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D-

BIOL 34200 Biological Science Practicum

Class:0-3 Lab:0 Credit:0-3
Attributes: Experiential Learning, ExL-Practicum
Students will do on- or off-campus a practicum in their field of interest. Can be repeated to satisfy the experimental learning requirement. This course will not be counted toward the biological sciences elective credits.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND BIOL 24300 with min grade of D- OR BIOL 24400 with min grade of D-

BIOL 35700 Introductory Animal Physiology

Class:3 Lab:3 Credit:4
Attributes: Lab Science
Prerequisite: One year of life science. A system analysis of animal physiology. With emphasis on mammals, the operation of systems such as respiratory, cardiovascular, neuromuscular, and endocrine will be considered. Interactions between components of individual systems as well as intersystem interaction is discussed.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D-

BIOL 40500 Conservation Biology

Class:3 Lab:0 Credit:3
Modern principles of biological conservation. Evaluation and conservation of biological species and their habitats. Role of human activities in species and habitat conservation.
Prereqs: BIOL 33300 with min grade of C-

BIOL 41200 Climate Change and the Environment

Class:3 Lab:0 Credit:3
The objective of this course is to provide an understanding of the patterns, drivers and consequences of climate change in terrestrial and aquatic ecosystems and the impacts on human society.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND BIOL 33300 with min grade of D-

BIOL 41300 Aquatic Ecology

Class:3 Lab:0 Credit:3
This course is designed to provide students with the basic understanding of freshwater and marine aquatic environments with emphasis directed towards freshwater systems. The relationships between the chemical make-up of the system, the physical movements of the water, the geology of the sediments and the biology of the various systems will be examined.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND BIOL 33300 with min grade of D-

BIOL 41400 Invasive Species Ecology

Class:3 Lab:0 Credit:3
This course is designed to provide students with an up-to-date perspective on invasive species. Part one will cover characteristics of invasive species and the ecological and evolutionary processes that occur when non-native species are introduced into new habitats. There will also be a review of past and present pathways that have led to the introduction and spread of invasives. Part two will cover invasive species control and management. Course literature will be a mix

of recent peer-reviewed articles, reports, and landmark papers.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D- AND BIOL 33300 with min grade of D-

BIOL 41800 Drugs and Disease

Class:3 Lab:0 Credit:3
This course provides students the opportunity to learn about common diseases in the United States and the current drugs utilized to treat various disease states. The students will have learned about cells and targets to the design and targeting for specific drugs and the mechanism of action.
Prereqs: BIOL 24300 with min grade of D-

BIOL 42600 Senior Capstone

Class:0 Lab:2 Credit:1
Students will meet two hours a week to discuss current issues in biology and give presentations. This course will integrate material learned in previous biology courses to round out the academic experience of graduating seniors and provide a final opportunity for the department to assess student achievement.
Prereqs: BIOL 31600 with min grade of D- OR BIOL 33300 with min grade of D- OR BIOL 35700 with min grade of D-

BIOL 42800 Biology Seminar

Class:1 Lab: Credit:1
Guest speakers, faculty and students will present current topics in biology. Prerequisites: 24 credit hours of biology courses.

BIOL 44000 Herpetology

Class:2 Lab:2 Credit:3
Attributes: Engr Tech Elective, Lab Science
The evolution, paleontology, taxonomy, morphology, physiology, ecology, and geographic distribution of amphibians and reptiles. Museum techniques, biosystematics, preservation, and caring for specimens are included. Field work emphasizes collection and identification of Indiana species.
Prereqs: BIOL 33300 with min grade of D-

BIOL 47700 Phycology

Class:2 Lab:3 Credit:3
Attributes: Lab Science
The study of algae with emphasis on identification, morphology and ecology of fresh water species.
Prereqs: BIOL 10100 with min grade of D- AND BIOL 10200 with min grade of D-

BIOL 48800 Biological Sciences Internship

Class:0-3 Lab:0-9 Credit:1-3
Attributes: Experiential Learning, ExL-Internship
Directed in-service training with on or off-campus employers may include, but are not limited to, government agencies private industry and community organizations. Can be repeated to statisfy the experimental learning requirement.

BIOL 48900 Biological Sciences Research

Class:0-12 Lab:0-36 Credit:1-12
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Prerequistes: 12 credits in BIOL Core Courses. Students will do research in the area of biological sciences with a primary investigator. They will contribute to ongoing research while learning current research techniques. They will analyze data and determine course of action to be taken in their experiments. During this process the students will develop critical thinking, oral, and written communication skills.

BIOL 49500 Special Assignments

Class:0-3 Lab:0-9 Credit:0-3
Attributes: Variable Title
Prerequisites: Three semesters of biological sciences. Reading, discussions, written reports or laboratory work selected for enrichment in special areas of the biological sciences.
Prereqs: BIOL 10100 with min grade of C- OR BIOL 10200 with min grade of C-

BIOL 50500 Biology Of Invertebrate Animals

Class:2 Lab:3 Credit:3

A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny.

BIOL 50700 Molecular Biology

Class:3 Lab:0 Credit:3

Molecular aspects of structure and function of nucleic acids and proteins, including recombinant DNA research. Prokaryotic and eukaryotic molecular biology are given equal weight.

Prereqs: BIOL 24300 with min grade of D- AND BIOL 24400 with min grade of D- AND BIOL 24401 with min grade of D- OR CHM 53300 with min grade of D-

BIOL 50800 Recombinant DNA Techniques

Class:1 Lab:5 Credit:3

Basic principles of genetic engineering, gene cloning with various vectors. Techniques include isolation of DNA, use of restriction endonucleases, separation of DNA fragments, transformation of E. coli with recombinant DNA, detection of DNA sequences in Southern blot hybridization, mRNA isolation, cDNA library construction, DNA sequencing, and PCR technology.

Prereqs: BIOL 24300 with min grade of D- OR BIOL 32000 with min grade of D- AND BIOL 24400 with min grade of D- OR BIOL 43000 with min grade of D- AND BIOL 24401 with min grade of D- OR BIOL 42900 with min grade of D- OR CHM 53300 with min grade of D-

BIOL 52500 Principles Of Neurobiology

Class:3 Lab:3 Credit:4

Attributes: Engr Tech Elective

A survey of fundamental topics in the physiology of the nervous system including a discussion of excitable membranes, the physiology and pharmacology of electrical and chemical synapses, and the organizational and function of vertebrate nervous systems.

BIOL 53300 Medical Microbiology

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Host parasite relationships. Immunology. Bacteria and viruses associated with infectious diseases.

Prereqs: BIOL 22100 with min grade of C- OR BIOL 31600 with min grade of C-

BIOL 53400 Laboratory in Medical Microbiology

Class:0 Lab:4 Credit:2

Attributes: Engr Tech Elective

Properties of microrganisms associated with infectious diseases.

Prereqs: BIOL 53300 with min grade of D-

BIOL 54100 Molecular Genetics of Bacteria

Class:3 Lab: Credit:3

Advanced bacterial genetics, with emphasis on the use of genetics as a powerful and creative intellectual activity that enables us to discover biological functions and to construct new organisms by the manipulation of DNA. Major topics include: mutations, genetic selections, recombination, regulatory mechanisms, and genomic evolution.

Prereqs: BIOL 31600 with min grade of C-

BIOL 55700 Physiology II

Class:3 Lab:0 Credit:3

A study of the human cardiovascular, pulmonary, blood and gastrointestinal systems. Higher neuronal functions and intersystem interactions will be discussed.

BIOL 56100 Immunology

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Introduction to the basic principles of immunology and serology in the molecular, cellular and organismal level.

Prereqs: BIOL 22100 with min grade of C- OR BIOL 31600 with min grade of C-

BIOL 56600 Developmental Biology

Class:3 Lab:3 Credit:4
Attributes: Engr Tech Elective
Principles of development of plants and animals; the formation of organ systems.
Prereqs: BIOL 24400 with min grade of C-

BIOL 58000 Evolution

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within the area, as well as evidence for and possible mechanisms of evolutionary change.

BIOL 58600

Class:0 Lab:6 Credit:2

BIOL 58700 Biogeography

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
An introduction to the principles of biogeography. Distribution patterns, the role of history, the interactions of genetics and ecology in development of the species range, the species equilibrium theory, and the evolutionary biogeography of communities and regional biotas.
Prereqs: BIOL 33300 with min grade of C-

BIOL 58800 Plant Ecology

Class:2 Lab:0 Credit:2
The physical-chemical and biotic environment affecting plants in nature; the dynamics of plant communities; ecological methods. Applications to agronomy, forestry, wildlife management, outdoor recreation, and other land use interests.

BIOL 59100 Field Ecology

Class:2 Lab:4 Credit:4
Attributes: Engr Tech Elective
A study of interactions which influence distribution and abundance of organisms and the theory which attempts to account for observed patterns in populations, communities, and ecosystems; adaptive strategies of organisms to interactions with other organisms and their environments. Emphasis on field studies and techniques and methods of sampling in aquatic and terrestrial communities.

BIOL 59500 Special Assignments

Class:0-18 Lab:0-18 Credit:1-18
Attributes: Variable Title
Special work, such as directed reading, independent study or research, supervised library, laboratory field work or presentation of material not available in the formal courses of the department. The field in which work is offered will be indicated in the student's record. Required for M.S. candidates in the non-thesis option.

BIOL 60100 Graduate Seminar in Biological Sciences

Class:1 Lab:0 Credit:1
A one-credit course that provides graduate students with opportunities to (1) explore original research and peer-reviewed literature in the life sciences, (2) better grasp the depth and implications of recent scientific advances through discussion with students and faculty, (3) gain written and verbal communication skills through their presentation of topics of current scientific interest.

BIOL 69800 Research M.S. Thesis

Class:0-18 Lab:0-18 Credit:1-18

BIZA 32500 Applied Business Statistics

Class:3 Lab:0 Credit:3
The course topics will include multiple regression, ANOVA, time series analysis, and non-parametric tests. The students

will be able to apply statistics to business problems.
Prereqs: BUSM 22500 with min grade of C-

BIZA 42000 Decision Analytics

Class:2 Lab:2 Credit:3
An overview of spreadsheet models available to analyze decision problems in various financial fields including finance, marketing, and operations. The course topics will include optimization, simulation and decision making under uncertainty.
Prereqs: ISM 32000 with min grade of C- OR MGMT 32000 with min grade of C-

BME 58300

Class:3 Lab:0 Credit:3

BME 59500

Class:3 Lab:0 Credit:3

BUSM 10000 Management Lectures I

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Wellness Education, Gen Ed-Univ/Personal Resources, Gen Ed-Wellness, General Education
An introduction to a survey of the field of management. Exposure to the different functional areas of management will be stressed. Focus will be on the individual development of the students in regard not only to future professional employment but also to his or her educational planning. Required for freshman management students.

BUSM 10100 Intro To Business

Class:3 Lab:0 Credit:3
Attributes: TransferIN
An introduction to the internal operations and external environment of contemporary business. Consideration is also given to the social economic role of business in our society. The basic business functions and role of management are also discussed.

BUSM 10500 Quantitative Methods for Business

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education
Quantitative techniques applied in business situations that are essential to business activities. Topics covered include finance charges and compound interest, patrol tax deductions, depreciation, descriptive statistics and graphical analysis.

BUSM 19000 Freshman Level Problems in Management

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Investigation into specific topic areas of management. Arrange with instructor before enrolling.

BUSM 22500 Fundamental Managerial Statistics

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education
The foundation for statistical decision-making. Topics include: probability theory, descriptive statistics, estimation, and statistical inference with managerial applications.
Prereqs: MA 15300 with min grade of C

BUSM 29000 Problems In Management

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Arrange with instructor before enrolling. Investigation in a specific management field. Permission of instructor required.

BUSM 30100 Management Career Lectures

Class:2 Lab:0 Credit:2
Workshops and lectures involving students in the decision- making process for career planning. Students will explore

career paths, develop a job search plan, and prepare and practice interviewing techniques. Skills in writing cover letters, constructing a resume, and interviewing will be a major focus of this course. Visiting professionals in Career Placement and Recruiting will share information, experiences and career opportunities in their fields.

BUSM 30500 Business Statistics

Class:3 Lab:0 Credit:3

Introduction to business statistics as related to facilitating managerial decision-making. Topics include descriptive statistics, probability models, estimation, hypothesis testing, and regression analysis. Students use software to do their own analysis.

Prereqs: MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C

BUSM 30600 Management Science

Class:3 Lab:0 Credit:3

Use of optimization, stimulation and decision theory models to support management decision making. Emphasis on modeling, interpreting results for managerial applications of linear and integer programming models, network problems, simulation models, and decision analysis. Computer applications are stressed.

Prereqs: MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C

BUSM 33010 Non Profit Organizational Structures

Class:3 Lab:0 Credit:3

This course covers the role and responsibilities of positions and structures including the role of volunteers in non-profit organizations.

BUSM 33300 Total Quality Management

Class:3 Lab:0 Credit:3

This course focuses on the management culture, philosophy, practices, and processes necessary to develop a total quality orientation. The course bridges quantitative, behavioral, and strategic concepts for designing organizations to be dynamic, integrated systems whose outputs are monitored for quality and continuously improved. Not open to students with credit in IET 37800.

Prereqs: OBHR 33000 with min grade of C OR OLS 25200 with min grade of C OR BA 23000 with min grade of C OR OBHR 22100 with min grade of C

BUSM 35400 Legal Foundations Of Business I

Class:3 Lab:0 Credit:3

An examination and study, for management students, of the nature and place of law in our society, both national and international, the social and moral bases of law enactment, regulation of business, legal liability, enforcement procedures, and the legal environment for managers.

BUSM 36000 Production/Operations Management

Class:3 Lab:0 Credit:3

An introductory course concerning the management of production, distribution and service systems operations. Topics covered include design of products, processes and facilities, planning, scheduling, and controlling inventory and quality.

Prereqs: MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C

BUSM 36100 Business Operations

Class:3 Lab:0 Credit:3

The operations function in a business enterprise. Topics include measuring capacity and productivity, product and process design, facility location and layout, inventory and scheduling.

Prereqs: (BA 12100 with min grade of C OR ACC 12100 with min grade of C) AND STAT 13000 with min grade of C

BUSM 36300 Total Quality Techniques

Class:3 Lab:0 Credit:3

Building upon basic statistical principles, this course covers the topics of acceptance sampling, control charts, capability, experimental design and regression analysis. Not open to students with credit in IET 35500.

Prereqs: MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C

BUSM 36400 Emerging Issues in Total Quality Techniques

Class:3 Lab:0 Credit:3
Topic coverage will change as the field of quality management evolves. Issues such as Just in Time, Taguchi methods, Ishikawa, Ohno, Shingo, and Toyota systems will be studied.
Prereqs: MGMT 36000 with min grade of C OR IET 35500 with min grade of C OR BUSM 36000 with min grade of C

BUSM 38000 International Business

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education
An introduction to the nature of international business. The course addresses the international business environment, including economic, political, legal, and social aspects. The assessment of international opportunities and risk is also addressed.
Prereqs: (MGMT 10100 with min grade of C OR BUSM 10100 with min grade of C) AND (ECON 25200 with min grade of C OR ECON 21100 with min grade of C)

BUSM 38300 Practicum in Quality Management

Class:3 Lab:0 Credit:3
This course is run in conjunction with the Small Business Institute of the Department of Management. Students will design and help implement quality management systems and concepts in an actual business.
Prereqs: (MGMT 36300 with min grade of C OR BUSM 36300 with min grade of C) AND (MGMT 33300 with min grade of C OR BUSM 33300 with min grade of C)

BUSM 39000 Junior Level Problem In Management

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Investigation into specific topic areas of management arranged with the instructor before enrolling.

BUSM 39100 Internship in Business Experiential Learning

Class:1-3 Lab:0 Credit:1-3
Attributes: Experiential Learning, ExL-Internship, Variable Title
Students work in a business organization in an organized and supervised situation, designed to provide experience and challenge in a business situation. Students are evaluated by the organization supervisor and the academic coordinator.

BUSM 40010 Non Profit Management

Class:3 Lab:0 Credit:3
The course includes principles of non-profit management as well as the roles and responsibilities of a non-profit board of directors, and become acquainted with the fundamentals of the programming and budgeting process.

BUSM 41400 Non Profit Grant Writing and Fundraising

Class:3 Lab:0 Credit:3
The purpose of this course is to prepare students to write grants for non-profit organizations and methods of basic fund raising and become acquainted with the fundamentals of the programming and budgeting process.

BUSM 45000 Strategic Management: Capstone

Class:0-2 Lab:0-2 Credit:0-3
Attributes: Experiential Learning, ExL-Design Projects
An extensive study of managment problems in business at policy-making levels; primarily for students majoring in management. Should be taken only in the last semester of senior year.
Prereqs: (MGMT 31000 with min grade of C- OR FIN 31000 with min grade of C-) AND (MGMT 32400 with min grade of C- OR MKG 32400 with min grade of C-) AND (MGMT 36000 with min grade of C- OR BUSM 36000 with min grade of C-) AND OBHR 33000 with min grade of C-

BUSM 46500 Forecasting for Management

Class:3 Lab:0 Credit:3
A course examining the statistical techniques of forecasting. Emphasis is placed on time-series data and computer based methods of estimation and testing of marketing and financial data will be studied. Not open to students with credit in ECON 46500.
Prereqs: MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C

BUSM 48900 International Management

Class:3 Lab:0 Credit:3

Explores how differences in cultural core values shape behavior and attitudes of workers, managerial colleagues, and negotiating partners. Special attention is directed towards the importance of culture in managerial decision making. Prereqs: OBHR 33000 with min grade of C OR BA 23000 with min grade of C OR OBHR 22100 with min grade of C

BUSM 49000 Problems In Industrial Management

Class:1-4 Lab:0 Credit:1-4

Attributes: Variable Title

Investigation in a specific management field. Arrange with instructor before enrolling. Permission of instructor required.

BUSM 49500 Internship in Management

Class:1-4 Lab:0 Credit:1-4

Attributes: Experiential Learning, ExL-Internship, Variable Title

A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization.

BUSM 49900 Undergraduate Research in Management

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title

Students will work with a faculty member on research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the student will develop critical thinking and oral and written communication skills. Permission of instructor required.

CAND 99200

Class:0 Lab:0 Credit:0

CAND 99300

Class:0 Lab:0 Credit:0

CAND 99400

Class:0 Lab:0 Credit:0

CDFS 58600 Seminar on Human Development and Disability

Class:2 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Practicum

The will expose students to multiple perspectives related to teh issues in human development and disability related issues. The purpose of the cours is to provide an interdisciplinary experience for students prepareing for work in the human services. Each class has a variety of professionals present on a topic they have expertise in (ie. Autism, dianostics, speech disabilities) and allow students to gain more in-depth knowledge about each topic and ask questions. There will be three scheduled field trips to allow students field experience in a human service agency including Riley Child Development Center in Indianapolis, IN, First Steps in Crown Point, IN and Opportunity Enterprises in Valparaiso, IN will be visited during the afternoon for two hours of the scheduled meetind days.

CDFS 59000 Special Problems

Class:0-5 Lab:0 Credit:0-5

Attributes: Variable Title

Special subjects for investigation and experiment according to the individual student's interest and need. Permission of instructor required.

CDFS 60100 Advanced Child Development

Class:2 Lab:2 Credit:3

This course provides an overview of foundational and current developmental research on changes that occur within the individual throughout infancy, childhood, and early adolesence. Emphasis is given to process and mechanisms that have been proposed to explain developmental changes. This course includes attention to social and cultural contexts within which individuals develop.

CDFS 60200 Advanced Family Studies

Class:3 Lab:0 Credit:3

Integrative and comprehensive assessment of both classic and recent contributions in the field of family studies. Topics include both classic and recent contributions in the field of family studies. Other topics include major theory and research, historical, current, and future critical issues in family studies.

CDFS 60300 Theories Of Family Therapy

Class:3 Lab:0 Credit:3

An examination of the history of family therapy, major family therapy theorists, and therapy treatment modalities.

CDFS 61500 Research Methods In Child And Family Study

Class:3 Lab:1 Credit:4

The basic research methods employed in the study of children and of families are examined. Students are afforded supervised practice in the application of selected research strategies and methodologies.

CDFS 61800 Program Development & Evaluation

Class:3 Lab:0 Credit:3

This course will acuqaint students with the life cycle of interventions deployed by a variety of organizations including human services, public administration, and non- profits. Program development emphasis include needs assessment, the replication of evidence-based practice, theory of change and the use of logic models, and grant writing. Program evaluation emphasis include theoretical approaches to evaluation, the use of data and measures, and exposure to both formative and summative approaches to program evaluation.

CDFS 65700 Social Constructionist Family Therapies

Class:3 Lab:0 Credit:3

Investigation of theory, research, and practice of constructivist and social constructionist family therapies. Readings include a wide range of original work by major theorists, such as White, deShazer, and Anderson and Goolishian.

CDFS 66000 Family Therapy Skills

Class:3 Lab:0 Credit:3

Attributes: Malpractice-Fam, Pers, Work

Training in use of basic family therapy skills. Procedures are applied in practice groups and analogue situations. A systemic bio-psychosocial view of addictions and of the techniques that family therapists employ to disrupt patterns within abusing and addictive family systems.

CDFS 66300 Structural And Strategic Family Therapies

Class:3 Lab:0 Credit:3

Investigation of theory, research, and practice of structural and strategic family therapies. Readings will include a wide range of the original works of major theorists such as Erickson, Minuchin, Haley, Walzlawick, and Palazzoli.

CDFS 66500 Transgenerational And Specialized Family Therapies

Class:3 Lab:0 Credit:3

Investigation of theory, research and practice of transgenerational and specialized family therapies. Readings will include a wide range of original works of the major theorists.

CDFS 66700 Practicum In Marriage Counseling

Class:3 Lab:0 Credit:3

Attributes: Malpractice-Fam, Pers, Work

Admission by consent of instructor. (May be repeated for credit) Supervised counseling experience in working with premarital and marital problems.

CDFS 66900 Practicum In Family Therapy

Class:3 Lab:0 Credit:3

Attributes: Malpractice-Fam, Pers, Work

Supervised counseling experience in family therapy. Instructor. (May be repeated for credit) Supervised counseling experience in family therapy.

CDFS 67100 Sex Therapy

Class:3 Lab:0 Credit:3

Examination of the literature, research and theories related to therapeutic interventions for sexual concerns in relationships. Particular attention is given to systemic approaches and to the relationship between marital and sex therapy.

Prereqs: CDFS 67000 with min grade of B-

CDFS 67800 Field Experience In Marriage and Family Therapy

Class:0-9 Lab:0 Credit:3-9

Admission by consent of instructor. May be repeated for credit. Supervised clinical experience in a community agency working with a variety of marital and family problems. Depending on the number of credit hours for which one registered, will require 8-24 clinic hours and 3-9 experiential hours per week. Supervised clinical experience in a community agency working with a variety of marital and family problems. Depending on the number of credit hours for which one is registered, will require 8-24 clinic hours and 3-9 experiential hours per week.

CDFS 68000 Professional Issues For Child And Family Specialists

Class:3 Lab:0 Credit:3

Prerequisite: Admission to doctoral studies or consent of instructor. Professional issues involved in working with children and families. Questions of ethics, legal relationships, and value problems may be pursued, as may such pragmatic inquiries as the role of professional organizations and labor unions in these fields.

CDFS 69800 Research MS Thesis

Class:0-18 Lab:0 Credit:1-18

CE 11500 Engineering Drawing I

Class:0 Lab:3 Credit:1

A technical drawing course covering engineering geometry, orthographic projection, auxiliary views, dimensioning, and tolerance using sketching techniques, and 2-D CAD. Credit is not allowed for both CE 11500 and ME 11500. This course replaces ME 11500 in the Civil Engineering curriculum. Initially it will be dual listed with ME 11500.

CE 11600 Engineering Drawing II

Class:0 Lab:3 Credit:1

A continuation of the technical drawing course covering 3-D parametric modeling, part assembly modeling, and detail and assembly drawings. Credit is not allowed for both CE 11600 and ME 11600. A minimum grade of C is required for course prerequisites.

Prereqs: CE 11500 with min grade of C- OR ME 11500 with min grade of C-

CE 20100 Surveying & G. I. S.

Class:2 Lab:3 Credit:3

Theory and practice of land surveying. Fundamentals of observing distances, elevations, and angles. Analysis of errors in surveying measurements. Computations of irregular areas. Circular and parabolic curves. Earth-work estimates. Computer applications, photogrammetry, geographic information systems (GIS) and global positioning systems (GPS) technologies.

Prereqs: MA 16400 with min grade of C- AND PHYS 15200 with min grade of C-

CE 20400 Civil Engineering Materials

Class:2 Lab:3 Credit:3

This course provides an introduction to the use, specification and test of common civil engineering construction materials such as steel, aluminum, aggregates, portland cement concrete, asphalt cement concrete, constituents of masonry, fiber reinforced plastics (FRP's) and timber. Practical behaviors of these materials systems will be emphasized. An understanding of these behaviors will be approached through examination of the materials characteristics. This course will provide introductory details of composites.

Prereqs: (MA 15900 with min grade of C- OR MA 15400 with min grade of C- OR APPL with a min test score of 085) AND CHM 11500 with min grade of C-

CE 27101 Basic Mechanics (Statics)

Class:3 Lab:0 Credit:3

Review of vector algebra an equilibrium. Hydrostatics, virtual work. Static stability, friction. First and second moments of areas, volumes, and masses, center of gravity. A minimum grade of C is required for course prerequisites. Credit is not allowed for both CE 27101 and ME 27100.

Prereqs: MA 16300 with min grade of C- AND MA 16400 with min grade of C- AND PHYS 15200 with min grade of C-

CE 27300 Mechanics of Materials

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Analysis of stress and strain, Mohr's circle, equations of equilibrium and compatibility; stress-strain laws; extension torsions, bending and deflection of beams, buckling of columns, elastic stability and strain energy, Castigliano's Theorem, pressure vessels, selected topics.

Prereqs: MA 26100 with min grade of C- AND (ME 27100 with min grade of C- OR CE 27101 with min grade of C-)

CE 27301 Mechanics of Materials Lab

Class:0 Lab:3 Credit:1

This lab will demonstrate the basic principles of strength of materials. Students will conduct tension tests, torsion tests, and learn to use strain gages with data acquisition systems to conduct experiments such as finding modulus of elasticity and Poisson's ratio, stress concentration, principal stress, and strain and deflection of beams.

Prereqs: CE 27300 with min grade of C- AND MA 16400 with min grade of C AND MA 26100 with min grade of C AND PHYS 15200 with min grade of C

CE 27500 Basic Mechanics II (Dynamics)

Class:3 Lab:0 Credit:3

Fundamental concepts, kinematics, translation and rotation. Kinetics, impulse, momentum, work, energy. Rectilinear and curvilinear translation of point masses. Plane motion of rigid bodies and vibration. Credit is not allowed for both CE 27500 and ME 27500. A minimum grade of C is required for course prerequisite.

Prereqs: MA 26100 with min grade of C- AND (CE 27101 with min grade of C- OR ME 27100 with min grade of C-)

CE 30800 Construction Engineering Management

Class:3 Lab:0 Credit:3

Introduction to the construction industry, phases in construction projects, construction contracts and legal structures, construction planning and scheduling, construction estimation, project cash flow, labor relations construction equipment management, quality management and construction safety.

Prereqs: CE 27300 with min grade of C AND CE 20400 with min grade of C

CE 31200 Fluid Mechanics

Class:3 Lab:0 Credit:3

Continuum, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis. Euler and Bernoulli equations, viscous flows, boundary layers flow in channels and around submerged bodies, one-dimensional gas dynamics. Credit is not allowed for both CE 31200 and ME 31200. A minimum grade of C is required for course prerequisite.

Prereqs: MA 26400 with min grade of C- AND (CE 27500 with min grade of C- OR ME 27500 with min grade of C-) AND ME 30500 with min grade of D-

CE 31300 Fluid Mechanics Lab

Class:0 Lab:3 Credit:1

Introduction to fluid mechanics laboratory, experiments on flow patterns, viscosity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, boundary layer studies, falling ball experiments and viscosity measurements. Credit is not allowed for both CE 31300 and ME 31300. Initially it will be dual-listed with ME 31300.

Prereqs: CE 31200 with min grade of C-

CE 32200 Introduction to Construction Engineering

Class:3 Lab:0 Credit:3

Introduction to project planning and management - U.S. construction industry practice, organization of construction firms, cost of construction projects, cost estimating, quantity takeoff. Topics will include equivalence, present worth,

uniform annual cost, depreciation, documents, contracts and management project scheduling inspection.
Prereqs: CE 27300 with min grade of C- AND ME 31100 with min grade of D-

CE 32300 Soil Engineering

Class:2 Lab:3 Credit:3
Introduction to soil engineering and testing. Identification and classification tests, soil water systems, settlement principles, soil stresses, and shear strength testing.
Prereqs: CE 31200 with min grade of D-

CE 33400 Structural Analysis I

Class:3 Lab:0 Credit:3
Loads, shear, moment, and deflected shape diagrams for beams and framed structures. Approximate methods. Calculations of deformations. Using flexibility methods to analyze frames and continuous beams. Using moment distribution and stiffness methods to analyze continuous beams and braced frames. Influence lines for determinate and indeterminate beams using Muller-Breslau principle. Computer applications to analyze beams and frames.
Prereqs: CE 27300 with min grade of C-

CE 34200 Engineering Hydrology and Hydraulics

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Introductory concepts, precipitation. Evaporation and transpiration. Interception and infiltration. Surface runoff, groundwater, and streamflow. Hydrograph analysis. Applied hydraulics including pipe and channel flow with design applications in culverts, pumping, water distribution storm and sanitary sewer systems.
Prereqs: CE 31200 with min grade of D- OR ME 31200 with min grade of D-

CE 35100 Introduction to Transportation Engineering

Class:3 Lab:0 Credit:3
Planning and operations of transportation facilities. Vehicle, operation and infrastructure characteristics. Technological, economic, and environmental factors. Travel demand modeling and capacity analysis.
Prereqs: STAT 34500 with min grade of C AND (ME 31200 with min grade of D- OR CE 31200 with min grade of D-)

CE 35400 Introduction to Environmental Engineering

Class:3 Lab:0 Credit:3
Introduction to air and water pollution, noise, and hazardous and sold wastes; consideration of treatment and management issues.
Prereqs: CE 31200 with min grade of C- OR ME 31200 with min grade of C-

CE 40400 Finite Element Analysis

Class:2 Lab:3 Credit:3
Brief history of finite element method and ANSYS; direct formulation, minimum total potential energy formulation; verification of results; trusses. Examples using ANSYS, one-dimensional elements. Numerical integration, Gauss Quadrature. Examples of one-dimensional elements in ANSYS; heat transfer problems; solid mechanics problems; two-dimensional elements. Pre-processing with ANSYS; boundary conditions; applications; heat conduction problems, torsion problems, beams and frames. Credit is not allowed for both CE 40400 and ME 40400. This will be one of the CE electives for Civil Engineering students.
Prereqs: MA 26400 with min grade of C- AND MA 26500 with min grade of C- AND CE 27300 with min grade of C-

CE 41100 Building Design

Class:3 Lab:0 Credit:3
Structural steel and reinforced concrete building design. Analysis of structural behavior of framework. Systems that resist lateral loads. Use of current building codes and design specifications. Review of building designs. Preliminary and final designs including analysis of alternative structural systems, and preparation of design sketches and calculations.
Prereqs: CE 11600 with min grade of C- AND CE 32300 with min grade of D- AND CE 33400 with min grade of D-

CE 41200 Groundwater Hydrology

Class:3 Lab:0 Credit:3
Flow through porous media, occurrence of ground water, well hydraulics, flow nets. Ground water contamination,

pollutant movement and unsaturated flow. Case studies. Numerical modeling techniques for ground water modeling, groundwater flow, and groundwater pollution problems in steady state conditions.
Prereqs: ME 31200 with min grade of D- AND CE 34200 with min grade of D-

CE 42800 Traffic Management

Class:3 Lab:0 Credit:3
Driver, pedestrian, and vehicular characteristics. Traffic characteristics, study of highway capacity; analyses of traffic patterns. Principles of traffic control for improved highway traffic service. Use intersection, corridor or network analysis, computer evaluation, and optimization tools.
Prereqs: CE 35100 with min grade of D-

CE 42900 Senior Engr Design I

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experiences in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course concludes with a substantial written and oral design review before a faculty team. Class discussions will include the ethical responsibility of engineers, impact of engineering solution in a global/societal context, and small-group interactions.
Prereqs: ENGL 30700 with min grade of D- AND CE 20400 with min grade of D- AND CE 27300 with min grade of C- AND CE 31200 with min grade of D- AND CE 33400 with min grade of D- AND CE 35100 with min grade of D-

CE 43000 Transportation Policy

Class:3 Lab: Credit:3
Current concepts, theories, and issues in managing transportation organizations. Study of transportation logistics and engineering systems with an overview of the operating context, leadership challenges, strategies and management tools that are used in today's public and private transportation organizations. Analyze alternative models of decision-making, strategic planning, stakeholder valuation and analysis, government-based regulation and cooperation within the transportation enterprise, disaster communications, systems safety, change management and the impact of globalization.
Prereqs: CE 35100 with min grade of D-

CE 43600 Urban Transportation Planning and Modeling

Class:3 Lab:0 Credit:3
Transportation data sources and cost analysis; management of transportation systems; transport financing; intelligent transportation systems planning; sustainable transportation concepts. Use of popular travel demand software and applications of geographic information systems (GIS) and global positioning systems (GPS).
Prereqs: CE 35100 with min grade of D-

CE 43900 Senior Engineering Design II

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students.
Prereqs: ME 42900 with min grade of D- OR CE 42900 with min grade of D-

CE 44500 Water Resources System Design

Class:2 Lab:3 Credit:3
Application of principles of hydrology, hydraulics and environmental engineering in the planning, design, and analysis of a comprehensive water resource project. The application of engineering concepts to the practical design of water supply, distribution, collection and treatment facilities will be emphasized. Written and oral presentation of student

projects will be required.
Prereqs: ME 31200 with min grade of D- AND CE 34200 with min grade of D-

CE 44600 Water and Wastewater Treatment

Class:3 Lab: Credit:3
Overview of engineering approaches to protect water quality with an emphasis on fundAmental principles. Theory and conceptual design of systems for treating municipal wastewater and drinking water. Reactor theory, process kinetics, and models. Physical, chemical, and biological processes, including sedimentation, filtration, biological treatment, disinfection and sludge processing. Engineered and natural processes for wastewater.
Prereqs: CE 35400 with min grade of D

CE 45200 Air Pollution

Class:3 Lab: Credit:3
Analysis of air pollution sources. Effects of air pollutants on human health and environment. Technologies and methods used to control air pollution. Regional and global issues such as acid rain, ozone depletion, and global climate change.
Prereqs: CE 35400 with min grade of D-

CE 45800 Solid Waste Management

Class:3 Lab: Credit:3
Planning and design of solid waste management systems; includes characterization and collection of domestic, commercial, and industrial solid wastes, waste minimization and recycling, energy and materials recovery, composting, incineration and landfill design.
Prereqs: CE 35400 with min grade of D-

CE 46200 Highway Design

Class:3 Lab:0 Credit:3
Introduction to traffic engineering and highway planning. Design, construction, and maintenance of highway facilities; earthwork, drainage structures; pavements. Preparation of environmental impact statement. This course has computer applications and will include completing a design project.
Prereqs: CE 35100 with min grade of D- AND CE 33400 with min grade of D-

CE 47100 Reinforced Concrete Design

Class:3 Lab:0 Credit:3
Analysis and design of beams, one-way slabs, and columns. Design of building frames using pattern loading and moments coefficients.
Prereqs: CE 33400 with min grade of D-

CE 47600 Reinforced Concrete and Steel Structures

Class:3 Lab:0 Credit:3
Concrete design - beans, slabs, girders, columns, and footings for building frames and bridges. Introduction to pre-stressed concrete, ultimate strength design, basic design criteria. Design of structural steel beams, columns beams-columns, and bolted and welded connections. Introduction to design aspects of composite steel/ concrete beams. Design of continuous structures. Plastic analysis. Training in computerized structural analysis and design.
Prereqs: CE 27300 with min grade of C- AND CE 33400 with min grade of D-

CE 48200 Engineering Risk Analysis

Class:3 Lab:0 Credit:3
Decision-making in the presence of uncertainty: reliability and probabilistic risk assessment (RPRA), decision analysis (DA), and cost-benefit analysis (CBA). Balancing risk and benefit in situations that involve human safety, potential environmental effects, and large financial and technological uncertainties.
Prereqs: CE 35400 with min grade of D-

CE 48500 Environmental Law and Public Policy

Class:3 Lab:0 Credit:3
Review and analyze federal and state regulation of air and water pollution and hazardous wastes. Analyze pollution as an economic problem and the failure of markets. Emphasize use of legal mechanisms and alternative approaches (such

as economic incentives and voluntary approaches) to control pollution and to encourage chemical accident and pollution prevention. Focus on the major federal legislation, the underlying administrative system, and the common law in analyzing environmental policy, economic consequences, and the role of the courts. Discuss classical pollutants and toxic industrial chemicals, community right-to-know, and environmental justice. Also provides an introduction to basic legal skills.
Prereqs: CE 35400 with min grade of D-

CE 48900 Civil Engineering Projects

Class:0-6 Lab:0-18 Credit:1-6
Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard undergraduate curriculum can be studied. Interested students should seek a faculty advisor who works in the area of special interest and prepare a brief description of the work to be undertaken in cooperation with the advisor.

CE 57000 Advanced Structural Mechanics

Class:3 Lab:0 Credit:3
Studies in stress and strain, failure theories, and yield criteria; flexure and torsion theories for solid and thin-walled members; and energy methods.
Prereqs: CE 27300 with min grade of C-

CET 10000 Technical Computations

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
A study of elements from algebra and trigonometry appropriate to surveying, estimating, statics, and other construction-related courses. Graphs and reports are included.

CET 10400 Elementary Surveying

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam
Measurement of distances, directions and angles, using the tape, level, theodolite and total station. Computation of areas and traverses, lines and grades. Also, topographic surveys, an introduction to construction surveys, and an introduction to GPS measurement.
Prereqs: MA 14700 with min grade of C

CET 10800 Route Survey and Design

Class:1 Lab:6 Credit:3
Attributes: Credit By Exam
Preliminary and construction surveys for route locations. Calculation and field work for simple and easement curves grade lines, and slope stakes. Preparation of plans, profiles, and cross-sections from field survey data earthwork estimates.

CET 16000 Statics

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Study of forces acting on bodies at rest. Coplanar and non-coplanar forces, concurrent and non-concurrent forces, hydrostatic forces, centroids and moments of inertia will be studied.
Prereqs: MA 14800 with min grade of C

CET 20800 Route Surveying

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam
Preliminary and construction surveys for highways and railroads, including calculation and field work for simple, compound, reverse, and easement curves, grade lines and slope stakes and the super-elevation of curves. Preparation of plans, profiles and cross-sections from field survey data. Earth-work estimates.
Prereqs: CET 10400 with min grade of C

CET 20900 Land Surveying And Subdivision

Class:1-2 Lab:4-6 Credit:3-4

Attributes: Credit By Exam
Theory and practice of land surveying, subdivision, filing and recording deeds, United States government survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles.
Prereqs: ARET 11700 with min grade of C- AND CET 10400 with min grade of C- AND CET 25300 with min grade of C-

CET 21000 Surveying Computations

Class:3 Lab:0 Credit:3
Analysis of errors in surveying measurements. Adjustments to surveying measurements, including an introduction to the least squares adjustment method. Computations using rectangular coordinates including intersections and coordinate transformations. Computations associated with horizontal and vertical control networks.
Prereqs: CET 10400 with min grade of C

CET 25300 Hydraulics And Drainage

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination.
Prereqs: CET 16000 with min grade of C

CET 26000 Strength of Materials

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field structural design.
Prereqs: CET 16000 with min grade of C

CET 26200

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam

CET 26400

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam

CET 26600 Materials Testing

Class:1-2 Lab:3-6 Credit:3
Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests.
Prereqs: CET 26000 with min grade of C

CET 28000 Structural Calculatns

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Practice in the calculations of loads, reactions, shear, and moment for determinate structures. Introduction to indeterminate structures with emphasis on moment distribution.
Prereqs: CET 26000 with min grade of C

CET 28100

Class:1 Lab:6 Credit:3
Attributes: Credit By Exam

CET 28200

Class:1 Lab:6 Credit:3
Attributes: Credit By Exam

CET 29900 Civil Engineering Technology

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Hours to be arranged with staff. Primarily for third and fourth semester students. Subject matter to be assigned by the staff. Course may be repeated for up to nine credit hours.

CET 30300 Land Survey Systems

Class:3 Lab:0 Credit:3
A study of ancient land survey systems which affected surveying in the United States, including metes and bounds systems. History and use of the United States Public Land Systems, including subdivision of sections, restoration of lost or obliterated corners, original surveys and retracement surveys. The study of other land system topics such as State Plane Coordinate Systems.
Prereqs: CET 10400 with min grade of C

CET 30400 Legal Descriptions for Survey

Class:3 Lab:0 Credit:3
Study of the writing and interpretation of legal descriptions as they pertain to the conveying of land. Types of legal descriptions. Written intentions of the parties. Controlling elements in descriptions. Easement descriptions. Rights associated with written descriptions versus unwritten rights. Other special topics in legal descriptions.
Prereqs: CET 30300 with min grade of C

CET 30600 Construction Surveying

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam
Application of surveying skills relevant to the construction field. Projects include layout of commercial and industrial buildings, transfer of horizontal and vertical control, establishment of route centerlines, establishment of lines and grades, determination of earthwork quantities, establishing slope stakes, triangulation, topographic mapping, etc. Instruments used will include transits, theodolites, automatic levels, construction lasers, and EDMs.
Prereqs: CET 10400 with min grade of C

CET 30900 Principles of Highway Construction

Class:3 Lab:0 Credit:3
Basic principles of highway construction, including materials, methods, interpreting of plans and specifications, earthmoving. drainage, paving, bridges, and retaining walls.

CET 32200 Astronomic and Geodetic Surveying

Class:3 Lab:0 Credit:3
CET 210 or equivalent or consent of instructor. Determination of directions based on astronomic observations. Computations associated with geodetic surveying and geodetic control surveys. Associations of geodetic locations and plane coordinate locations. Introduction to surveying by use of GPS methods.
Prereqs: CET 21000 with min grade of C

CET 33100 Properties And Behavior of Soils

Class:2 Lab:3 Credit:3
Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways.
Prereqs: CET 26600 with min grade of C

CET 36600

Class:1 Lab:6 Credit:3
Attributes: Credit By Exam

CET 36800

Class:1 Lab:3 Credit:2

CET 38600 Reinforced Concrete Construction

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam

A study of concrete as both a construction and a structural material. Field methods and practices used in concrete construction. Fundamentals of reinforced concrete design as applied to beams, slabs, columns, walls and footings. The testing of reinforced concrete structural members.

CET 40200 Surveying Law

Class:3 Lab:0 Credit:3

Legal aspects of surveying relative to boundary control, including sequential and simultaneous conveyances, adverse possession, riparian rights and boundaries and other interests in real property. Study of evidence and how it impacts boundary surveying. State laws and standards which impacts surveys.

Prereqs: CET 30400 with min grade of C-

CET 40400 Property Surveying

Class:3 Lab:0 Credit:3

The Land Surveyor in the context of real estate development and transfer. The rules and classification of evidence and their use. Transfers of real estate role of title companies. The process for a Legal Survey. Retracement survey of a subdivision, evidence gathered and optimum resolution for the boundaries on such survey. Plats and Reports. Case Studies.

Prereqs: CET 40200 with min grade of C

CET 40800 Construction of Highways

Class:2 Lab:3 Credit:3

Attributes: Credit By Exam

Materials, design and methods used in flexible and rigid pavement construction. Topics include preliminary layout and design of intersections and highways, soil requirements subgrade requirements, drainage requirements, construction procedures, and maintenance.

CET 40900 Property Surveying

Class:2 Lab:3 Credit:3

Junior standing in CMET department required. Office and field work associated with land surveying. Laws of land surveying and public records of real property. Metes and bounds, federal subdivision, and state plane coordinate descriptions.

CET 43200 Foundation Construction

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

A study of the design principles, construction methods equipment and construction procedures used in constructing shallow and deep foundations. Excavation procedures, temporary bracing, construction site dewatering, and loads on underground structures will also be studied.

CET 49900 Civil Engineering Technology

Class:0 Lab:0 Credit:1-4

Attributes: Variable Title

Hours, subject matter and credit to be arranged by staff. Course may be repeated for credit up to 9 hours.

CGT 10100 Introduction to Computer Graphics Technology

Class:3 Lab:0 Credit:3

This course provides an introduction to and a survey of the discipline of computer graphics. As an introductory course for incoming freshman, its topics include survey of the applications of computer graphics, the knowledge base and history of computer graphics, an examination of computer graphics technologies and careers in this rapidly emerging and evolving field, as well as an overview of the abundance of available resources for study and research in computer graphics at Purdue University.

CGT 11000 Technical Graphics Communications

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam

This course is an introduction to graphic language used to communicate design ideas using CAD. Topics include: sketching, mult-iview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

CGT 11100 Design for Visualization & Communication

Class:2 Lab:2 Credit:3

An introductory design course for computer graphics majors. Students develop an understanding of the basic design elements and principles, composition and typography through exercises and projects. The focus is on visual thinking, exploring the relationship between type and image, and developing multiple solutions to a given problem.

CGT 11200 Sketching for Visualization & Communication

Class:2-3 Lab:0-2 Credit:3

This course applies fundamental computer graphics concepts of visualization, communication and creativity within a sketching metaphor. Exercises and projects in graphic theory, problem solving and sketching skill development provides students with activities that focus on further development within the discipline. A variety of sketching techniques are used to gather critical information and transform data into effective communication instruments.

CGT 11600 Geometric Modeling for Visualization & Communication

Class:2 Lab:2 Credit:3

Core introductory computer graphics course that provides entry-level experiences in geometric modeling. Students develop geometric analysis and modeling construction techniques and processes to produce accurate computer models for graphic visualization and communication.

CGT 11700 Illustrating for Visualization & Communication

Class:2-3 Lab:0-2 Credit:3

This foundation course stresses the use of pictorial illustration for visualization and communication. Various projection systems are introduced with discussion focusing on the appropriate use of view and system utilized to accentuate and provide clear communication. A variety of digital tools are used to construct, extract and render pictorial views using vector and raster tools.

CGT 14100 Internet Foundations, Technologies, and Development

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam, Experiential Learning, ExL-Design Projects, Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education

PC literacy is required. This course explores the history, architecture, and development of the World Wide Web. Current tagging and scripting languages are covered in a tool independent environment. Topics also include authoring tools, design, graphic and multimedia formats, and commerce, implementation and security issues.

CGT 21100 Raster Imaging for Computer Graphics

Class:2-3 Lab:0-2 Credit:3

Digital images are produced using a variety of computer technologies. Advanced color theory, surface rendering, and light control are emphasized in relation to technical illustration, hardware characteristics, and software capabilities.

CGT 21500 Computer Graphics Programming I

Class:2-3 Lab:0-2 Credit:3

This course focuses on scripting and programming fundamentals, logics and problem solving necessary for advancement into upper level CGT courses. A cross-section of languages and technologies will be introduced and demonstrated. The course will progress from basic knowledge through more advanced topics towards the end of the semester. Languages and technologies include but not limited to: Java (Processing) and Python.

CGT 21600 Vector Imaging for Computer Graphics

Class:2-3 Lab:0-2 Credit:3

Attributes: Experiential Learning, ExL-Design Projects

Full-color vector illustration for a variety of uses are produced using computer methods. Color theory, surface analysis, and rendering techniques are emphasized as they apply to vector based illustrations.

CGT 22600 Introduction to Constraint-Based Model

Class:2 Lab:2 Credit:3

This course explores the techniques used in the construction and manipulation of constraint-based solid models and

assemblies. Emphasizes extracting data from databases. Downstream applications of data and the impact on overall product design processes are explored.
Prereqs: CGT 21100 with min grade of D-

CGT 24100 Introduction to Computer Animation

Class:2-3 Lab:0-2 Credit:3
This course introduces the knowledge base on which digital animation and spatial graphics technology are founded and developed. Emphasis will be placed on developing a working knowledge of the mechanics of 3D geometric formats, spline based modeling with polygon mesh & NURBS, procedural mapping of raster images, simplified polygon modeling, rendering methods, hierarchical linking, and kinematic fundamentals.

CGT 25100 Principles of Creative Design

Class:2 Lab:2 Credit:3
This course is an intermediate exploration of conceptualization and problem-solving using the integration of type and image as both visual and verbal communication. Topics such as systems of organization, visual hierarchy creativity, typography, color, and navigation are introduced and explored in a systematic way. Students will also be introduced to the issues of information and user interface design to create effective and visually stimulating communication devices.
Prerequisite: CGT 216
Prereqs: CGT 11100 with min grade of D-

CGT 25600 Principles of UX Design

Class:2-3 Lab:0-2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
This course introduces studens to the process of user- centered design of computer systems hymans interact with. Students learn how to draw upon principles of usability and user interface design rooted in human psychology and user research in order to conceptualize, prototype, and evaluate computer systems. Topics include processes such as user research, conceptual design, prototyping, and evaluation and concepts such as visual hierarchy, usability, information architecture, navigation, and more. The course is platform-independent and encourages students to experiment with new emerging technologies.
Prereqs: CGT 11100 with min grade of D-

CGT 29000 Computer Graphics Technology

Class:1-3 Lab:2-4 Credit:1-3
Attributes: Variable Title
Course topics will be determined by the computer graphics faculty. Hours and subject matter shall be arranged by the instructor and approved by the CGT curriculum committee. This course will not be used for independent study.

CGT 30100 Creating Graphics for Digital Display

Class:2 Lab:2 Credit:3
The process of creating, editing and reformatting graphics for web and multimedia presentation. Students will gain proficiency in the creation and manipulating of rater and vector based imagery in appropriate technology formats for multimedia delivery. Color theory, design, communication and presentation skills will be emphasized.
Prereqs: CGT 21100 with min grade of D-

CGT 30400 Color and Composition

Class:2 Lab:2 Credit:3
Students will examine traditional color harmonies and modernist theories. Interaction of color and the application of these ideas in the work of 20th Century artists are studied and adapted to student projects. Creative and expressive uses of color in all areas of design are encouraged.
Prereqs: CGT 21600 with min grade of D-

CGT 30500 Interactive Animation and Delivery Methods

Class:2 Lab:2 Credit:3
New and emerging computer technologies are used to create interactive media-rich Web and stand-alone delivery projects Students focus on the use of emerging scripting technologies that extend the capabilities of HTML, including JavaScript and ActionScript. Additionally, unique vector and raster implementations, such as Macromedia Flash, will be

discussed and used. The course furthers the student's ability to utilize the time and location independent capabilities of Web and new interactive multimedia content delivery methods.
Prereqs: CGT 21600 with min grade of D-

CGT 30700 Advanced Graphic Design for Web and Multimedia

Class:2 Lab:2 Credit:3
This course focuses on the creation of intermediate to advanced graphic web design. Students are required to plan, design and implement a major web project and a final online presentation. Areas of concentration will include transforming existing print and presentation materials for use on the Internet, integration of original vector, raster and animation art, and refining of graphic design principles as they relate to graphic web design. Students will use leading industry standard software in the creation process. Prerequisites: CGT 21600 or Permission of Instructor.
Prereqs: CGT 14100 with min grade of C AND CGT 21100 with min grade of C AND CGT 21600 with min grade of C AND CGT 25600 with min grade of C AND CGT 35300 with min grade of C

CGT 30800 Pre Press Production

Class:2 Lab:2 Credit:3
This course applies the fundamentals of computer graphics concepts of visual communication and creativity using industry standard software, QuarkXpress. Students gain expertise through exercises and projects in Typography, Desk Top Publishing, and image application. Emphasis will be on design and pre-press production. Prerequisite: CGT 21600 or permission of instructor.
Prereqs: CGT 21600 with min grade of D-

CGT 30900 Internship in Computer Graphics Technology

Class:0 Lab:0 Credit:2-3
Attributes: Experiential Learning, ExL-Internship
Internship course in computer graphics technology. Practical experience totaling at least 240 hours in computer graphics technology. Departmental approval is required.

CGT 31000 Drawing, Acting and Scripts for Animation

Class:2 Lab:2 Credit:3
This course analyzes the symbiotic relationship between thinking and physical action, between emotion and its expression. Students will explore the visual storytelling process for film, animation, video games or multimedia. Students will learn the history of and gain needed drawing, skills to create storyboards, animatics, along with the learning the importance to the production process. Students will learn how animation scripts are developed as well as how visual stories are told through technical elements such as composition, lighting, framing and perspective. Students will explore how to tap into their creativity and create interesting original animations.
Prereqs: CGT 11200 with min grade of C-

CGT 31600 Industrial Applications of Computer Graphics Technology

Class:1-3 Lab:0 Credit:0-3
Attributes: Variable Title
Consent of Instructor (May be repeated for up to six hours additional credit) This includes specialized topics, skills and applied problem solving associated with Computer Graphics Technology. The level of coverage varies according to the audience. Several variable topics may be offered under this title.

CGT 33000 Multimedia Animation and Video Game Design and Development

Class:2 Lab:2 Credit:3
This course outlines all the details to create an original video game, build an effective game proposal outline with background information, the story, asset lists, hardware and software requirements. This course will teach the students to maximize design and development time of the original creator. Students will properly detail the proposal for a programming and artistic team to take a game from start to finish.
Prereqs: CGT 24100 with min grade of D-

CGT 34000 Digital Light and Render

Class:2-3 Lab:0-2 Credit:3
The development of a working knowledge of perspective display of three-dimensional models and the resulting effects

of projected light sources on shade, shadow, color. texture, and atmospheric effects in architecture, product illustration and animation. Emphasis will be placed on lighting design, analysis, and photorealistic simulation for commercial graphic applications.
Prereqs: CGT 24100 with min grade of D- AND CGT 11600 with min grade of D-

CGT 34100 Motion for Computer Animation

Class:2-3 Lab:0-2 Credit:3
An applied course covering three-dimensional computer graphic animation for graphics specialists and professionals involved in the use of technical design, time and motion study, surface texture mapping, digital lighting, color and the technology required to produce computer animations for commercial applications in manufacturing design, marketing and training
Prereqs: CGT 24100 with min grade of C- AND CGT 11600 with min grade of C-

CGT 34600 Digital Video and Audio

Class:2-3 Lab:0-2 Credit:3
Covers the use of digital technologies for video and audio focused toward use in multimedia, hypermedia and animation products. Students examine the methods of creating, sampling and storing digital audio and the constraints placed on these media assets when used for media based products. Emphasis is placed upon the technology of digital video and audio including formats, data rates, compressors, and the advantages and disadvantages of the different technologies.
Prereqs: CGT 24100 with min grade of C-

CGT 35100 Interactive Multimedia Design

Class:2-3 Lab:0-2 Credit:3
This course introduces the many facets of interactive multimedia design and production. Students are introduced to authoring programs used for information delivery with special attention focused on the integration of various media assets for communication. There is also concentration on the storage, management, and retrieval of media assets in a production environment. Considerable time is spent on the systematic design of interactive media products to meet specified goals of communication.
Prereqs: CGT 25600 with min grade of C-

CGT 35300 Principles of Interactive and Dynamic Media

Class:2-3 Lab:0-2 Credit:3
This course explores the development of interactive and dynamic media components for multimedia and hypermedia products. The course examines the design, creation and integration of text, 2D animation and sound for use in CD, DVD and web media. Students also learn the basics of scripting and how it can be used to create interaction.
Prereqs: CGT 21600 with min grade of C-

CGT 35600 Web Programming, Development & Data Integration

Class:2-3 Lab:0-2 Credit:3
A course focusing on the development of dynamic content and applications to facilitate information distribution. The course stresses development strategies for managing the rapidly changing information of corporations and organizations for just-in-time distribution, using authoring programs to create interactive multimedia products that utilize database management systems, file systems, and XML to provide a method for visualizing and manipulating that data. Significant time is spent on intermediate to advanced programming and scripting.
Prereqs: CGT 25600 with min grade of C-

CGT 41100 Contemporary Problems in Applied Computer Graphics

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam, Experiential Learning, ExL-Service Learning
is a group based course that attempts to identify, design, qualify, manage, create and present a final project relative to existing or emerging issues within the discipline. Activities and experiences will explore related topics such as project planning and management, user expectations, interpersonal communications skill and quality management. The course concludes with faculty, peers and practicing professionals evaluating oral, written and media presentations of final project.
Prereqs: CGT 25600 with min grade of C- AND CGT 35600 with min grade of C- AND CGT 35100 with min grade of C-

AND CGT 35300 with min grade of C-

CGT 41501 Contemporary Problems In Applied Computer Graphics

Class:2 Lab:0 Credit:2

Students identify, research, define, and propose a senior project relative to existing or emerging issues within Computer Graphics Technology. Activities and experiences will explore related topics such as self-assessment, industrial needs and applications, exploratory research interpersonal communication skills, and management of time, resources, and quality assurance. The course concludes with faculty, peers, and practicing professionals evaluating formal project proposals developed by individual students. Permission of instructor required.

CGT 41600 Senior Design Project

Class:2-3 Lab:0-3 Credit:3

This capstone course requires students to engage in a substantive endeavor directed at solving problems related to computer graphics. Activities include the creation and management of graphic systems and media assets per the requirements of the senior design proposal. Students are required to demonstrate professional attitudes and attributes in the timely completion and presentation of their project.

Prereqs: CGT 41100 with min grade of C- OR CGT 41500 with min grade of C-

CGT 44200 Production for Computer Animation

Class:2 Lab:2 Credit:3

An applied course covering advanced spline modeling techniques, lighting techniques, applied shading, motion dynamics and controllers, particle systems, application, customization programming, and pre-production development and planning. Study of emerging computer animation and spatial graphic technologies will be included.

Prereqs: CGT 34100 with min grade of D-

CGT 44600 Post-Production & Special Effects for Computer Animation

Class:2-3 Lab:0-2 Credit:3

A variety of commercial applications of technical animation and spatial graphics are analyzed and produced, with special emphasis upon client development, design, organization, scripting, storyboarding, technical production, management and evaluation.

Prereqs: CGT 44200 with min grade of C

CGT 45000 Professional Practices

Class:2 Lab:2 Credit:3

Preparation for professional employment in computer graphics professions. Topics covered include creative and publishing law, contracts, copyrights, corporate and freelance employment considerations; portfolio planning and interviewing. Arranged interviews and portfolio reviews.

Prereqs: CGT 41100 with min grade of C-

CGT 45100 Multimedia Application Development

Class:2-3 Lab:0-2 Credit:3

This course focuses on the development of application that manipulate media asset. Significant time is spent on intermediate to advanced programming and scripting as well as the synchronization of aural and graphical components. Students are required to plan, design, and implement a major project and final presentation.

Prereqs: CGT 35100 with min grade of C- AND CGT 35300 with min grade of C- AND CGT 35600 with min grade of C-

CGT 45600 Advanced Web Programming, Development & Data Integration

Class:2-3 Lab:0-2 Credit:3

This course presents the most advanced technologies available for use on the World Wide Web and within corporate intranet environments. Emphasis and discussion is focused on the advantages of these technologies as well as on implementation to create unique solutions for business and industry. Strategies for planning, development and implementation will be discussed and demonstrated. Significant time is spent on advanced programming and scripting as well as manipulation and visualization of data from various sources, including robust database management systems. Students are required to plan, design, and implement a major project.

Prereqs: CGT 35600 with min grade of C

CGT 49000 Computer Graphics Technology

Class:1-3 Lab:2-4 Credit:1-3
Attributes: Variable Title
Senior level course topics will be determined by the CGT faculty. Hours and subject matter shall be arranged by the instructor and approved by the CGT curriculum committee. This course will not be used for independent study.

CGT 49100 Special Topics in Computer Graphics Technology

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title
Consent of instructor. A variable title, variable content course pertaining to problems and research in graphical methods and representation.

CGT 51200 Human Factors of Computer Interface Design

Class:3 Lab:0 Credit:3
Addresses an array of human factor issues related to human computer interaction and the graphic user interface. Theoretical and practical relationships are drawn between aesthetics and the cognitive sciences in the development of primary multimedia and hypermedia products. Methods to validate design solutions are learned through controlled usability testing and assessment through small and large prototype projects.

CGT 51300 Interactive Multimedia Development and Research

Class:3 Lab:0 Credit:3
A survey of the interactive multimedia development process, knowledge base and applications in business and industry. Particular attention is paid to research issues surrounding theoretical, technological, and interactive techniques, and validating those approaches through applied research. Emphasis is placed on the interdisciplinary nature of the development of new media tools.

CGT 52000 Computer Graphics Programming

Class:3 Lab: Credit:3
This course provides a working knowledge of Computer Graphics programming using OpenGL and C++. OpenGL is the platform independent industrial standard APO and the leading edge technology for computer graphics application design. It has been used in the gaming industry as well as in research and for scientific visualizations. The course focuses on creating real-time and interactive applications and is structured into several blocks. Open/GL Introduction, modeling, texturing, transformations, lighting, and interactive application design. Students will develop various applications throughout the course focusing on different aspects of computer graphic programming.
Prereqs: CGT 51100 with min grade of D-

CGT 58100 Workshop in Computer Graphics Technology

Class:0-8 Lab:0-8 Credit:0-8
Attributes: Variable Title
Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education.

CHE %

Class:3 Lab:0 Credit:3

CHM 10000 Preparation for General Chemistry

Class:2 Lab:3 Credit:3
An introduction to the basic ideas and laboratory techniques of chemistry, together with relevant parts of algebra and elementary physics. Intended for those whose background does not permit them to proceed directly with a general chemistry course.
Prereqs: MA 11500 with min grade of C- OR APPL with a min test score of 045

CHM 11100 General Chemistry

Class:2 Lab:3 Credit:3
Attributes: Lab Science
Laws and principles of chemistry, with emphasis on conceptual models and applications and of importance in technology. Preparation equivalent to one year of high school chemistry is recommended for students enrolling in this course.

CHM 11200 General Chemistry

Class:2 Lab:3 Credit:3
Attributes: Lab Science
Continuation of CHM 11100.

CHM 11500 General Chemistry

Class:3 Lab:3 Credit:4
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN
Laws and principles of chemistry, with special emphasis on topics of importance in science and engineering. Numerical problems and relationships are introduced whenever quantitative treatment is possible. Preparation equivalent to one year of high school chemistry is strongly recommended for students enrolling in this course. Students with inadequate preparation should enroll in CHM 100. This course is required of student majoring in chemistry, physics and engineering.
Prereqs: MA 15300 with min grade of C- OR APPL with a min test score of 060

CHM 11600 General Chemistry

Class:3 Lab:3 Credit:4
Attributes: Credit By Exam, Lab Science, TransferIN
A continuation of CHM 11500.
Prereqs: CHM 11500 with min grade of C-

CHM 11900 General Chemistry

Class:2-4 Lab:3-3 Credit:3-5
Attributes: Credit By Exam, Lab Science, TransferIN
A survey of organic, and biological chemistry. Intended primarily for students in the nursing program but may be taken by others with the consent of the instructor.
Prereqs: CHM 10000 with min grade of C-

CHM 19400 Freshman Chemistry Orientation

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
Designed to provide incoming chemistry majors with the academic, survival, and computational skills to make a successful transition from high school to college. Discussion of opportunities within chemistry department including degree options, co-op program, undergraduate research, careers in chemistry, use of spreadsheet software, graphing packages, and drawing programs for chemical structures. Attendance and performance on assigned projects are the basis of the pass/no pass requirement.

CHM 21500 Laboratory Health And Safety

Class:1 Lab:0 Credit:1
Emphasis on the principles of prudent practice in the use and storage of laboratory equipment and materials, including consideration of governmental regulations regarding the disposal of toxic and hazardous material.

CHM 24100 Introductory Inorganic Chemistry

Class:3 Lab:3 Credit:4
Attributes: Lab Science
Descriptive inorganic chemistry dealing in a systematic way with the elements and the structures, properties, and reactions of their compounds.
Prereqs: CHM 11600 with min grade of D-

CHM 25500 Organic Chemistry

Class:3 Lab:0 Credit:3
A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc. (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by reactivity orders, orientation effects, stereo-chemistry, and relative rates. Recommended for biology majors.
Prereqs: CHM 11600 with min grade of C-

CHM 25501 Organic Chemistry Lab

Class:0 Lab:3 Credit:1
Pre-requisite: CHM 25500 Laboratory experiments to accompany CHM 25500, illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.
Prereqs: CHM 25500 with min grade of C-

CHM 25600 Organic Chemistry

Class:3 Lab:0 Credit:3
A continuation of CHM 25500 with various functional groups such as the carboxyl, carbonyl, amino, etc., and including such polyfunctional natural products as carbohydrates and peptides.
Prereqs: CHM 25500 with min grade of C-

CHM 25601 Organic Chemistry Lab

Class:0 Lab:3 Credit:1
Pre-requisite: CHM 25600 A continuation of CHM 25501, but emphasizing methods for identifying organic compounds, including simple "unknowns".
Prereqs: CHM 25501 with min grade of C- AND CHM 25600 with min grade of C-

CHM 26100 Organic Chemistry

Class:3 Lab:0 Credit:3
Recommended for students majoring in chemistry or chemical engineering. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. The syntheses and reactions of these materials are discussed. Modern theory and stereochemistry are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations.
Prereqs: CHM 11600 with min grade of D-

CHM 26200 Organic Chemistry

Class:3 Lab:0 Credit:3
A continuation of CHM 26100, but with a broader scope. The chemistry of a variety of functional groups is discussed. Theory is employed extensively to demonstrate the coherence underlying seemingly diverse transformations. Qualitative organic analysis is introduced with particular emphasis on spectroscopic methods.
Prereqs: CHM 26100 with min grade of D-

CHM 26300 Organic Chemistry Laboratory

Class:0 Lab:3 Credit:1
Attributes: Lab Science
Laboratory experiments designed to illustrate the lecture material of CHM 26100. Elementary laboratory techniques essential to organic chemistry are introduced followed by the actual synthesis and purification of compounds discussed in CHM 26100.
Prereqs: CHM 26505 with min grade of C-

CHM 26400 Organic Chemistry Laboratory

Class:0 Lab:3 Credit:1
Attributes: Lab Science
A continuation of CHM 26300 in that the experiments are designed to illustrate principles discussed in CHM 26605. A major portion of the course is devoted to methods employed in organic qualitative analysis. The student is expected to identify several unknown compounds and mixtures.
Prereqs: CHM 26300 with min grade of C- AND CHM 26605 with min grade of C-

CHM 26500 Organic Chemistry Laboratory

Class:0 Lab:6 Credit:2
Attributes: Lab Science
Similar to CHM 26300 except that a larger number and more sophisticated organic syntheses are required. The preparations are designed, not only to illustrate the classical reactions discussed in CHM 26100, but to allow for an extrapolation of the principles involved to other systems.
Prereqs: CHM 26100 with min grade of D-

CHM 26505 Organic Chemistry

Class:3 Lab:0 Credit:3

A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. The syntheses and reactions of these materials are discussed. Modern theory and sterochemistry are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many chemical transformations. Recommended for students majoring in Chemistry.

Prereqs: CHM 11600 with min grade of C-

CHM 26600 Organic Chemistry Laboratory

Class:0 Lab:6 Credit:2

Attributes: Lab Science

A continuation of CHM 26500. All experiments are designed to illustrate the principles discussed in CHM 26200. A major portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify unknowns and mixtures and is introduced to some modern instrumental techniques.

CHM 26605 Organic Chemistry

Class:3 Lab:0 Credit:3

A continuation of CHM 26505, but a broader scope. The chemistry of a variety of functional groups is discussed. Theory is employed extensively to demonstrate the coherence underlying seemingly diverse transformations. Qualitative organic analysis is introduced with particular emphasis on spectroscope methods.

Prereqs: CHM 26505 with min grade of C-

CHM 27300 Introductory Physical Chemistry

Class:3 Lab:0 Credit:3

An introductory treatment of the general properties of gases, liquids, and solids, with an emphasis on applications of physical chemistry in real systems. This course may be used by pre-medical, pre-dental, biology, and technology students.

Prereqs: MA 22400 with min grade of D AND PHYS 22100 with min grade of D AND CHM 11600 with min grade of D

CHM 29000 Selected Topics In Chemistry For Lower Division Students

Class:0-99 Lab:0-99 Credit:1-4

Attributes: Variable Title

Undergraduate special work, such as an individual project, not covered in the courses.

CHM 29400 Sophomore Chemistry Seminar

Class:1 Lab:0 Credit:1

Required of sophomores majoring in any chemistry curriculum. Discussion of undergraduate research opportunities, upper- division courses, career opportunities, laboratory safety, use of the library and chemical information, and topics of current interest in chemistry.

Prereqs: CHM 26505 with min grade of C-

CHM 31800 Biomolecular NMR Spectroscopy/Magnetic Resonance Imaging

Class:3 Lab:0 Credit:3

Designed for biotechnology, biology and chemistry majors. Topics will include: theory and modern experimental applications of proton nuclear resonance (H-NMR) spectroscopy, as needed for structural elucidation of biomolecules; H-NMR spectroscopy in two, three, and four dimensions; and Magnetic Resonance Imaging (MRI) and its uses in diagnostic medicine.

Prereqs: CHM 33300 with min grade of C- AND (CHM 26605 with min grade of C- OR CHM 25600 with min grade of C-) AND (PHYS 25100 with min grade of C- OR PHYS 26100 with min grade of C-)

CHM 32000 Introduction To Biochemical Techniques

Class:1 Lab:3 Credit:2

Attributes: Engr Tech Elective, Lab Science

A survey of the theoretical basis and practice application of modern biochemical techniques including separation, qualitative analysis, and quantitative analysis methods.

Prereqs: CHM 25600 with min grade of AND CHM 23100 with min grade of

CHM 32100 Analytical Chemistry I

Class:3 Lab:3 Credit:4
Attributes: Engr Tech Elective, Lab Science
Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a component prior to its determination; general approaches to quantitation problems at the trace level; critical comparisons of competitive procedures, with emphasis upon principles of separation processes, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision. levels of accuracy and precision.
Prereqs: CHM 25600 with min grade of C- OR CHM 26605 with min grade of C-

CHM 32400 Environmental Chemistry

Class:3 Lab:0 Credit:3
This course focuses on the chemicals, chemical principles and chemical phenomena of environmental consequence. Topics include ozone depletion, greenhouse effect, air pollution, water pollution, acid rain, toxic chemicals, energy flow, and environmental technology.
Prereqs: CHM 25500 with min grade of C- OR CHM 26505 with min grade of C-

CHM 33300 Principles Of Biochemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Structure and function of biologically important molecules. Intended for students in life science.
Prereqs: (CHM 26505 with min grade of C- OR CHM 25500 with min grade of C-) AND (CHM 26605 with min grade of C- OR CHM 25600 with min grade of C-)

CHM 34200 Inorganic Chemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Properties of inorganic compounds in terms of their electronic and molecular structures. A survey of the preparations and reactivities of important compounds of the representative elements with an emphasis on group trends. The elementary chemistry of the transition metals including magnetic and spectral properties of coordination compounds. Interpretation and correlation of inorganic compounds electronic and molecular structures. The chemistry of the transition metals including magnetic and spectral properties of coordination compounds. Structure and bonding models. Acid-base solvolysis and thermodynamics of inorganic systems.
Prereqs: CHM 26605 with min grade of C- OR CHM 25600 with min grade of C-

CHM 34300 Inorganic Chemistry Laboratory

Class:0 Lab:3 Credit:1
Attributes: Engr Tech Elective, Lab Science
Laboratory work to accompany CHM 342.
Prereqs: CHM 34200 with min grade of D-

CHM 35000 Coating And Resins

Class:3 Lab:0 Credit:3
This course provides a background in coatings technology and resins, including types, composition, additives, and methods of application.
Prereqs: CHM 25600 with min grade of C- OR CHM 26605 with min grade of C-

CHM 37300 Physical Chemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Properties of gases; kinetic molecular theory; introduction to atomic and molecular structure; classical thermodynamics, including chemical equilibria, molecular interpretation of thermodynamics.
Prereqs: CHM 26605 with min grade of C- AND PHYS 25100 with min grade of C- AND MA 26100 with min grade of C-

CHM 37400 Physical Chemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective

Phase equilibria, liquids, electrolytic solutions and cells, structure of atoms and molecules, spectroscopy, chemical kinetics, and solid state.
Prereqs: CHM 37300 with min grade of C- AND MA 26100 with min grade of C-

CHM 37600 Physical Chemistry Laboratory

Class:0 Lab:6 Credit:2
Attributes: Engr Tech Elective, Lab Science
Laboratory portion of CHM 373 and 374.
Prereqs: CHM 37300 with min grade of C- AND CHM 37400 with min grade of C-

CHM 42400 Analytical Chemistry II

Class:2 Lab:6 Credit:4
Attributes: Engr Tech Elective, Lab Science
Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.
Prereqs: CHM 32100 with min grade of C-

CHM 42500 Molecular Modeling & Visualization

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
Principles and applications of current theoretical and computational methods in molecular modeling. Advanced visualization methods will be used to study molecular structure.
Prereqs: CHM 25600 with min grade of D OR CHM 26200 with min grade of D OR CHM 26605 with min grade of D

CHM 44400 Cosmochemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Nucleosynthesis and chemical abundances. Origin, composition, and structure of the earth and extraterrestrial objects. Isotope geology, geo- and cosmochronology with particular emphasis upon the moon and meteorites.

CHM 46200 Intermediate Organic Chemistry

Class:3 Lab:0 Credit:3
Theory and application of organic chemistry and reaction mechanisms to organic synthesis and contemporary research topics in closely related areas. Topics include stereochemistry, reactive organic intermediates, molecular orbital theory, photochemistry, organic materials chemistry, and chemical biology.
Prereqs: CHM 25600 with min grade of C- OR CHM 26605 with min grade of C-

CHM 46300 Medicinal Chemistry

Class:3 Lab:0 Credit:3
Topics include basic mdeicinal chemistry principles, synthesis of selected drugs, a survey of drug development, and drug design.
Prereqs: CHM 26605 with min grade of C- OR CHM 25600 with min grade of C-

CHM 46400 Polymer Chemistry

Class:3 Lab:0 Credit:3
An introduction to the synthesis, characterization, and physical properties of high molecular weight polymers. The reaction, thermodynamics, and kinetics of polymerization as well as the physical characterization, the molecular structre, and the fabrication of polymers will be discussed.
Prereqs: CHM 25600 with min grade of C- OR CHM 26605 with min grade of C-

CHM 46500 Synthetic Organic Chemistry

Class:3 Lab:0 Credit:3
The topics include the development of synthetics for preparing a variety of organic molecules, the use of protcting groups, enolate chemistry as a key method for forming C-C bonds, functional group transformations, and other synthetic methods.
Prereqs: CHM 26605 with min grade of C- OR CHM 25600 with min grade of C-

CHM 49000 Selected Topics in Chemistry for Upper Division Students

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Variable Title. Selected topics not covered in other courses.

CHM 49400 Junior-Senior Chemistry Seminar

Class:1 Lab:0 Credit:1
Major emphasis on developing skills in oral and written presentations by students. The subject matter can be library material and/or accomplishments in undergraduate or co-op research.
Prereqs: CHM 29400 with min grade of C- AND CHM 49800 with min grade of C-

CHM 49800 Research in Chemistry

Class:0-5 Lab:3-12 Credit:1-5
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Undergraduate Research, which will qualify as an Experiential Learning experience. Admission by special permission.

CHM 49900 Special Assignments

Class:0 Lab:3-15 Credit:1-5
Attributes: Lab Science, Variable Title
Undergraduate level special work, such as a senior thesis, not included in other courses.

CHM 50200

Class:2 Lab:3 Credit:3

CHM 51300 Chemical Literature

Class:1 Lab:0 Credit:1
Types of information in technical publications; exercises in finding, assembling and using such data.
Prereqs: CHM 25600 with min grade of B- AND CHM 32100 with min grade of B-

CHM 53300 Introductory Biochemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Chemistry and utilization in the living organisms of lipids, carbohydrates, proteins, enzymes, and hormones; physiological chemistry of the blood, urine, and other fluids and tissues; essentials of nutrition.

CHM 53400 Introductory Biochemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Continuation of CHM 53300 with emphasis on enzymatic catalysist and metabolic transformations.
Prereqs: CHM 53300 with min grade of B-

CHM 53500 Biochemistry Laboratory

Class:0 Lab:3 Credit:1
Attributes: Engr Tech Elective
Laboratory work to accompany CHM 53400.

CHM 54800 Radiochemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Elements of nuclear chemistry; the uses of isotopes in chemical research; elementary principles of radiation chemistry.
Prereqs: CHM 37400 with min grade of B-

CHM 56100 Organic Chemistry

Class:3 Lab:0 Credit:3
A general survey of practical and theoretical aspects of elementary organic chemistry followed by a more intensive study of a few selected topics. Designed primarily for secondary school teachers. This course may not be used toward a degree in chemistry.

CHM 56300 Organic Chemistry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Ionic and free radical reactions are discussed critically with emphasis on the synthetic and mechanistic aspects of the synthetic and mechanistic aspects of the reactions studied. Selected topics in physical organic chemistry.
Prereqs: CHM 26200 with min grade of B-

CHM 56400 Introduction To Polymer Chemistry

Class:0 Lab:0 Credit:0
An introduction to the synthesis, characterization, and physical properties of macromolecules. The reactions, thermodynamics, and kinetics of polymerization as well as the physical characterization, the molecular structure, and the fabrication of polymers will be discussed.
Prereqs: CHM 26200 with min grade of B-

CHM 59900 Special Assignments

Class:0-4 Lab:0-8 Credit:1-4
Attributes: Variable Title
Graduate level directed reading or special work not included in other courses.

CHNS 10100 Chinese

Class:3 Lab:2 Credit:4
Attributes: Foreign Language 1
Introduction to Level I

CHNS 10200 Chinese

Class:3 Lab:2 Credit:4
Attributes: Foreign Language 2
Introduction to Level II
Prereqs: CHNS 10100 with min grade of D-

CIS 10000

Class:2 Lab:2 Credit:3

CIS 10300 Survey of Information Systems and Information Technology

Class:3 Lab:0 Credit:3
An introduction to information technology and computer information systems designed for department majors. Topics include university resources, career opportunities, ethics, computer concepts, problem solving techniques, logic, system development life cycle, program development life cycle, database management systems, computer math, security and privacy issues, networks, and file management.

CIS 11100 Introduction to Human Computer Interaction

Class:2 Lab:2 Credit:3
This course introduces foundational concepts of human computer interaction. Students focus on human-centered software development, usability testing and understanding interaction styles.

CIS 14000 Telecommunications in Business

Class:3 Lab:0 Credit:3
The course is an introduction to how computer networks are used in business and industry environments.

CIS 16000

Class:3 Lab:2 Credit:4
Attributes: Credit By Exam

CIS 16600 Introduction to Programming

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam, Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education
This course is an introduction to computer programming. Emphasis in this course is on the program development life-cycle, structured programming and top-down design. Topics include identifiers, data types, arithmetic operators if, if/else, looping, case selection, modules, arrays, and an introduction to classes. Extensive programming exercises are

required.
Prereqs: MA 15300 with min grade of C-

CIS 18000 Introduction to Project Management

Class:3 Lab:0 Credit:3
This course introduces foundational concepts of project management. Students focus on components of IS project management, the impact of IS projects on companies and basic theories of how to manage IS projects.

CIS 18700 Applied Computer Operating Systems

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
Pre-requisites: EET 11000, MA 15300 This course is an introduction to computer operating systems and other systems software. Topics include: supervisor organization, utility programs, job control language, memory management and process management. Labs include installations of client based operating systems like: Windows 9x, Windows 2000, Windows NT and Unix/Linux.
Prereqs: ECET 11000 with min grade of D- OR EET 11000 with min grade of D- OR CIS 21000 with min grade of D- AND MA 15300 with min grade of D-

CIS 20000 Introducton to Information Systems Policies

Class:3 Lab:0 Credit:3
An introduction to the need for and creation of policies for information systems and their impact on business. Course content will include information security policies, disaster recovery policies, and other related policy topics.
Prereqs: ENGL 10400 with min grade of D-

CIS 20400 Introduction To Computer-Based Systems

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Technology in Society, Gen Ed-Computer Utilization, Gen Ed-Technology in Society, General Education, TransferIN
An introduction to computer-based systems with an emphasis on how computers can assist the user. Computer concepts, terminology, and a survey of programming languages, operating systems, word processing, spreadsheets, database, communications, graphics, and Internet are included. Extensive laboratory exercises are assigned.

CIS 20500 Information Systems For Management

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
An integrated approach to Management Information Systems with emphasis on business systems analysis, design, development and implementation. A case problem will be presented which the students will implement via the above approach.
Prereqs: CIS 20400 with min grade of C-

CIS 21000 Personal Computer Technology

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
The personal computer is explored at the application level. Topics covered include an in-depth study of DOS commands and application software review. An overview of digital circuits, the internal structure of microcomputers, microchip differences, PC communications, microcomputer operating systems and peripheral devices are discussed in relation to the evaluation of PC hardware and software. New technology topics round out the course.
Prereqs: CIS 20400 with min grade of D-

CIS 21500 Structured Program Development

Class:2 Lab:2 Credit:3
An introduction to the development cycle, logic diagrams, debugging procedures, top-down design, top-down programming, is used to implement program solutions. Extensive programming exercises are assigned.
Prereqs: MA 15300 with min grade of D-

CIS 21600 Visual Programming

Class:2 Lab:2 Credit:3

This course is an introduction to object-oriented program development. An overview of object-oriented analysis and design techniques and terminology is presented. Object-oriented programming techniques are implemented using a visual programming environment. Extensive written homework and computer laboratory exercises are assigned. Computer program solutions are implemented using a visual programming environment.
Prereqs: CIS 21500 with min grade of C-

CIS 21700 Visial Basic Programming

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
This course emphasizes VB program development. An overview of analysis and design techniques and terminology is presented. Object-oriented programming techniques are implemented using a visual programming environment. Numerous written homework and computer laboratory exercises are assigned.
Prereqs: CIS 16600 with min grade of D-

CIS 21800 C# Programming

Class:2 Lab:2 Credit:3
Emphasis in this course will be on the object-oriented paradigm using C# (C-sharp). Topics include definition of classes and objects, definition of class methods, definition of derived classes, inheritance, polymorphism, exception handling, and an introduction to development of Window's applications. Extensive programming exercises using C# are required.

CIS 23000 Data Communications

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
The role of data communications in modern business environments is explored. Real time systems and data transmission techniques are covered. Topics include terminal equipment, communication media, data codes, error detection and correction, local area versus wide area networks, digital transmission techniques, terminal software, and the Open Systems Interconnection (OSI) model for network software. The primary emphasis in the course is on software aspects.
Prereqs: ECET 11000 with min grade of D- OR EET 11000 with min grade of D- OR CIS 21000 with min grade of D- AND MA 15300 with min grade of D-

CIS 23200

Class:3 Lab:2 Credit:4
Attributes: Credit By Exam

CIS 23300

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam

CIS 24100 Web Development

Class:2 Lab:2 Credit:3
This course is an in-depth study on the internet and World Wide Web. Topics include intra- and extra-net concepts, security issues, design criteria and other Web aspects. Focus is on teaching skills necessary to develop applications for use on the Internet. Students learn how to write HTML, BVScript, and JavaScript code, how to use Microsoft FrontPage and other tools to create Web pages, and how to use image maps, forms and scripts, frames, animated GIG files tables, and style sheets. Students will complete a semester project working as a member of a team.
Prereqs: CIS 16600 with min grade of D-

CIS 24200 E-commerce Architecture

Class:3 Lab:0 Credit:3
This course is an introduction to client/server and web- based architecture. Topics include the history and evolution of client/server systems, standards, client/ server processing models the role of the client and of the server, middleware, multi-tiered architectures, methods of data distribution, designing a client/server system,distributed RDBMS, transaction processing and E-commerce. New developments, trends and uses for E-commerce are discussed.
Prereqs: CIS 24100 with min grade of D-

CIS 25100

Class:2-3 Lab:0-2 Credit:3
Attributes: Credit By Exam

CIS 25200 Systems Analysis And Design

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
An introduction to the procedural requirements of the system cycle. Through actual problem solution, the student is introduced to the techniques of system planning, analysis, form and file design, documentation, implementation and evaluation.
Prereqs: COM 11400 with min grade of C- AND ENGL 10400 with min grade of C-

CIS 25300 Applied Database Techniques

Class:2 Lab:2 Credit:3
An introduction to the applied aspects of database systems and their associated languages. Topics include database terminology and concepts including data modeling, data dictionaries, redundancy, independence, security, privacy, and integrity. Extensive laboratory exercises are assigned.
Prereqs: CIS 16600 with min grade of D- AND MA 15300 with min grade of D-

CIS 25500 Fundamentals of Information Assurance

Class:3 Lab:0 Credit:3
This course provides an integrated, comprehensive coverage of the information security policies, process, techniques, security tools, and awareness vital to information security. The classroom instruction provides a practical approach through case scenarios of both the principles and practice of information, computer, and network security for the enterprise and home.
Prereqs: CIS 14000 with min grade of D-

CIS 26000

Class:3 Lab:2 Credit:4
Attributes: Credit By Exam

CIS 26100 RPG Programming

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
An introduction to programming in RPG/400. Extensive programming exercises are assigned including report generation, control breaks and the creation and maintenance of indexed files.
Prereqs: CIS 21500 with min grade of D-

CIS 26300 Java Programming

Class:2 Lab:2 Credit:3
The course uses the Java programming language creating object-oriented software, including applications utilizing a graphical user interface. Students will study the structure and style of Java and will be required to submit extensive programming laboratory exercises.
Prereqs: CIS 16600 with min grade of C-

CIS 26400

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam

CIS 26500 Cobol Programming

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
A study of the programming language, ANSI COBOL, which is especially useful for file and table handling and extensive input and output operations. The student will study the structure and details of COBOL and perform programming exercises dealing with practical applications like table handling, record selection and reporting.
Prereqs: CIS 16600 with min grade of D-

CIS 26600 C++ Programming

Class:2 Lab:2 Credit:3
Emphasis in this course is on object-oriented paradigm using C++. Topics include definition of classes, data abstraction, friend member functions, this pointer, static class member, operator overloading, inheritance, virtual function and polymorphism, template library. Extensive programming exercises in C++ are required.
Prereqs: CIS 16600 with min grade of C

CIS 26700 Software Engineering Requirements: Definition and Quality

Class:3 Lab:0 Credit:3
This course introduces basic concepts and principles of software engineering requirements, its tools and techniques and methods for modeling software systems. It looks at how software quality assurance and configuration management are performed and how software process improvement is maintained in order to assure the highest quality in the development of software.
Prereqs: CIS 25200 with min grade of D- AND CIS 26600 with min grade of D-

CIS 27700 SE Design, Construction and Evolution

Class:3 Lab:0 Credit:3
This course covers the methods and techniques used in the design of software systems. It includes architectural and detailed design, with an emphasis on object-oriented methods, the design process, and the design documentation and review. It also examines issues, methods and techniques associated with constructing software, given an architectural and detailed design, and for maintaining software over its lifetime. Prerequisites: CIS 26700.
Prereqs: CIS 26700 with min grade of C-

CIS 28600 Computer Operating Systems I

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
An introduction to computer operating systems and other system software. Topics include: supervisor organization, utility programs, job control language, memory management and process management.
Prereqs: ECET 11000 with min grade of D- OR CIS 21000 with min grade of D- OR EET 11000 with min grade of D- AND MA 15300 with min grade of D-

CIS 28800 LAN Technology

Class:2 Lab:2 Credit:3
This course is an intermediate networking course and local area networking and design course. This is a laboratory and lecture course that covers the topics of topologies, networking protocols, hardware, and software of the local area network. Students will evaluate networking technologies, design local area networking solutions, and implement local area networking solutions.
Prereqs: CIS 23000 with min grade of D- AND CIS 28700 with min grade of D-

CIS 29000 Computer Project

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Independent study for sophomore students who desire to execute a computer-oriented project. Course may be repeated for up to six hours credit.

CIS 29400

Class:3 Lab:0 Credit:2

CIS 30000

Class:2-3 Lab:0-2 Credit:3
Attributes: Credit By Exam

CIS 30100 Data And File Structures

Class:2 Lab:2 Credit:3
Methods of organizing, linking, and retrieving information stored in computer memory or auxiliary storage: arrays, lists, stacks, queues, linked lists, trees. File organization and access: sequential, random, indexed, linked, inverted, partitioned. Associated data manipulation algorithms: data entry, searching, retrieval, sorting; algorithmic analysis. Selected applications.

Prereqs: CIS 26600 with min grade of D-

CIS 30200 Information Systems Budgeting & Procurement

Class:3 Lab:0 Credit:3

An introduction to the budgeting and procurement processess and issues and their impact on business. Course content will include vendor selection and management costs on IS projects and planning IS budgets.

CIS 30400 Advanced Computer Utilization

Class:2 Lab:2 Credit:3

Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education

This course is a continuation of CIS 20400. The objectives of the course are to teach students how to obtain and analyze information, apply advanced application skills, research a topic, generate reports and present the results. These computer skills are required in many disciplines today.

Prereqs: CIS 20400 with min grade of C AND COM 11400 with min grade of C

CIS 31000 Server Administration

Class:2 Lab:2 Credit:3

This course will prepare students for being a network and server administrator. Specific topics of the course will include administration of commercial operating systems in a commercial environment. Students will have practical knowledge on how to install, configure and implement a server solution. Students will be exposed to the theory of server technologies, directory services, and management theory of server systems.

Prereqs: CIS 28800 with min grade of D-

CIS 31200 Legal Issues in Information Technology

Class:3 Lab:0 Credit:3

This course focuses on legal issues surrounding Information Technologies. Current legal issues in information technology are addressed including elements of contracting, payment systems, digital signatures, privacy concerns, intellectual property, IT torts and criminal liability including hacking, computer trespass and fraud. Examination of legal issues including privacy, systems abuse and legal practices in Information Technology will be explored.

Prereqs: CIS 25500 with min grade of D-

CIS 31500 Wireless Network Technology

Class:2 Lab:2 Credit:3

This course will introduce the fundamentals of wireless technology with an emphasis on information technology and implementation issues. Wireless communication theory, licensing standards, limitations, and emerging technologies will be explored in depth. This course has an extensive laboratory component and students will implement several wireless local area networking technologies.

Prereqs: CIS 28800 with min grade of D-

CIS 32300 Object Oriented Systems Analysis and Design

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

This is an introduction to the object-oriented analysis and design techniques for systems development. Topics include problem analysis, data collection techniques, system and program design techniques.

Prereqs: ENGL 10400 with min grade of D-

CIS 33300

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam

CIS 34100 Web Development II

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam

This course is a continuation of CIS 24100. Advanced Web content generation techniques are covered. Topics include using advanced multimedia and database and application integration.

Prereqs: CIS 24100 with min grade of D-

CIS 34200 Multimedia for Web Developers

Class:2 Lab:2 Credit:3

A.S. Degree in CIW Internet/Web Technology. This course is an introduction to the creation and use of graphics, animation, video and audio on the Web. Students will design, create and deploy several instances of graphics video and audio on a series of Web pages. Topics include graphics, video and audio file formats, creating multimedia content, formatting images on Web pages, animation and video, and the use of graphics for purposes such as buttons dividers and image maps.

Prereqs: CIS 24100 with min grade of C-

CIS 34500 Computer Graphics

Class:2 Lab:2 Credit:3

A survey of computer hardware used to make graphic displays including printers, plotters, and cathode ray tubes. Programming techniques for plotting lines and special symbols and the organization and representation of data, and a survey of applications.

Prereqs: CIS 16600 with min grade of D- AND MA 15300 with min grade of D-

CIS 35100 Decision Support And Expert Systems

Class:2-3 Lab:0-2 Credit:3

Attributes: Credit By Exam

Introduction to techniques employed in supporting decision-making in business, industry and government. Various types of models are developed and solved using manual and computerized techniques. Students analyze, prepare a model for, and develop solutions for selected types of problems. Decision support software packages may be specified to implement some solutions. Topics include an overview and relationship to Artificial Intelligence, project management, optimization techniques, statistical analysis, graphical analysis, simulation techniques, building management models, and presentations of results.

CIS 35300 Advanced Database Methods

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam

Topics include processing statements of SQL blocks, procedures, functions, packages, dependencies, database triggers, built-in packages, dynamic SQL and Object Technology and code tuning. Students aquire advanced skills in an applied environment reinforcing concepts and techniques of SQL programming.

Prereqs: CIS 25300 with min grade of D- OR MGMT 30800 with min grade of D-

CIS 35400 Relational and Object-Oriented Database Modeling

Class:2 Lab:2 Credit:3

This course discusses the role of databases in the System Development Life Cycle, with an emphasis on rational base analysis and object-oriented database analysis and design techniques-logical data modeling. Additional topics include the functions and components of state-of-the-art commercial DBMS software, distributed database, database models, and the role and function of the Database Administrator. Students will be assigned data modeling projects.

Prereqs: CIS 25200 with min grade of D- AND CIS 25300 with min grade of D-

CIS 35500 Database Management System Implementation

Class:2 Lab:2 Credit:3

Attributes: Variable Title

This course emphasizes the implementation of a relational DBMS. Students will use fourth generation languages and tools to implement design specifications. Additional topics include the implementation of physical data models, backup/ recovery facilities, concurrency control, integrity services and security mechanisms. Students will be assigned implementation projects.

Prereqs: CIS 35400 with min grade of D-

CIS 35600 Topics in Database Programming

Class:2 Lab:2 Credit:3

Attributes: Variable Title

Pre-requisites: CIS 26100, or CIS 26300, or CIS 26500, or CIS 26600. This course is an introduction to accessing a

relational database using a programming language such as COBOL, C++, JAVA or RPG. Focus is on one language during the semester. Topics include defining and controlling transactions, sequential access techniques, use of primary and secondary keys, cursors, report generation, updating techniques, and dynamic SQL. This course is a variable title course. This course can be repeated, with a different title, for credit.
Prereqs: CIS 26100 with min grade of D- OR CIS 26300 with min grade of D- OR CIS 26500 with min grade of D- OR CIS 26500 with min grade of D-

CIS 35700 Data Warehouse/Data Mining

Class:3 Lab: Credit:3
Attributes: Credit By Exam
This course is an overview of data warehousing and data mining together with in-depth explanations of critical issues in planning, design, deployment and ongoing maintenance of data warehousing. Students will gain a clear understanding of the techniques for extraction of data from sources, data transformations, data staging, data warehouse architecture and infrastructure and various methods for delivery. Additional topics will include an overview of On-Line Analytical Processing, Knowledge Discovery Database Process Model, Expert Systems, Neural Networks, Regression Analysis, Intelligent Agents as they relate to data warehousing.
Prereqs: CIS 35400 with min grade of C-

CIS 36300 Advanced JAVA Programming

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
Prerequisite:A.S. Degree in CIW Internet/Web Technology. The course is a continuation of CIS 26300. Topics include multi-threading, client/server, database access and exception handling.
Prereqs: CIS 26300 with min grade of C-

CIS 36500 Topics In Cobol

Class:2-3 Lab:0-2 Credit:3
Attributes: Credit By Exam
Advanced COBOL topics concerning indexed files with variable length records, direct files, sophisticated table handling employing subscripting and indexing, simulation and program use. The Report Writer feature of COBOL is also introduced. Programming exercises include advanced file maintenance techniques and menu-driven programs. Subprogram use. The Report Writer feature of COBOL is also introduced. Programming exercises include advanced file maintenance techniques and menu-driven programs.
Prereqs: CIS 26500 with min grade of D-

CIS 37300

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam

CIS 38300 On-Line Programming Techniques.

Class:2-3 Lab:0-2 Credit:3
Attributes: Credit By Exam
An introduction to Command Level CICS used to illustrate the concepts and considerations required in the design. development and implementation of online application programs. CICS commands, program design, programming, screen maps, debugging and testing are covered utilizing business-oriented assignments. Screen maps, debugging and testing are covered utilizing business oriented assignments.
Prereqs: CIS 36500 with min grade of D-

CIS 38400 Database Integration

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
This capstone course combines database skill sets and techniques, providing students with an integrated comprehensive experience of various database platforms and programming languages. Topics include the latest development tools, database features and strategies, embedded SQL programming, administrative API's, CLI.ODBC and OLE DB programming, JAVA programming, stored procedures and more. Students develop database applications in a variety of

environments using a variety of programming tools, maximizing database performance, availability and efficiency
Prereqs: CIS 35500 with min grade of D-

CIS 38900 Novell LAN Administration

Class:2 Lab:2 Credit:3

Pre-requisite: CIS 18700, CIS 23000 The emphasis in the course is on illustrating the tasks that the LAN administrator must perform to maintain a NOVELL network. Topics include the SYSCON menu, menu creation, trustee assignments, assigning rights to users, file directories, installing software on the file server, login scripts, and network monitoring software.

Prereqs: CIS 18700 with min grade of D- AND CIS 23000 with min grade of D-

CIS 39300 Industrial Practice III

Class:1 Lab:0 Credit:1

Practice in industry with written reports of the practice by the co-op student.

Prereqs: CIS 29200 with min grade of D-

CIS 39400 Industrial Practice IV

Class:1 Lab:0 Credit:1

Practice in industry with written reports of the practice by the co-op student.

Prereqs: CIS 39300 with min grade of D-

CIS 39500 Industrial Practice V

Class:0 Lab:0 Credit:0

Practice in industry with written reports of the practice by the co-op student.

Prereqs: CIS 39400 with min grade of D-

CIS 40000 Information Systems Strategic Planning

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research

Strategic planning methods for information systems are covered and their relationship to the overall strategic business plans. Course content will include enterprise resource plans and business process redesign.

Prereqs: CIS 20000 with min grade of D-

CIS 41200 Human Computer Interaction

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

This course is designed for students who desire to understand the complex interaction of people with machines. Students will learn how to design, manage, maintain, train, refine and evaluate the user interface of interactive systems. Serious users of interactive systems will find that the course gives them a more thorough understanding of the design questions for user interfaces.

Prereqs: CIS 11100 with min grade of D-

CIS 41300 EDP Auditing And Control

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam

An introduction to the fundamentals of EDP auditing. Emphasis on understanding EDP controls, the types of EDP audits and the concepts and techniques used in EDP audits. Exposure to risk assessment and professional standards in the field of EDP auditing are provided.

Prereqs: CIS 25200 with min grade of D-

CIS 41400 Information Systems Professionalism & Ethics

Class:3 Lab:0 Credit:3

The course will cover ethical issues regarding the development of software and information systems and discuss the impact of these systems on society and businesses. Professional societies and their roles in information systems including their professional and ethical codes will be addressed.

Prereqs: CIS 25200 with min grade of C

CIS 41600 Wireless Security

Class:2 Lab:2 Credit:3

This course will prepare students for being a wireless network administrator. Specific topics of the course will include encryption, VPN technologies over wireless, authentication mechanisms, and wireless topologies for security, radiation and signal propagation techniques, site analysis, monitoring and troubleshooting, and current threats against wireless devices. The course will cover advanced concepts specific to wireless security technologies and the implementation of protective technologies in the wireless realm.

Prereqs: CIS 31500 with min grade of D-

CIS 42000 Wide Area Network Implementation

Class:2 Lab:2 Credit:3

This course is an advanced networking course and enterprise level architecture and design course. Students will evaluate networking technologies, design enterprise level networking solutions and implement enterprise networking solutions.

Prereqs: CIS 31000 with min grade of C- AND CIS 28700 with min grade of C-

CIS 42100 Risk Assessment for Information Assurance

Class:3 Lab:0 Credit:3

This course focuses on analysis of Risk Assessment models associated with information technology framework. This course describes threats associated with information technology security. IT security threats from Hardware and Software level as well as countermeasures for reducing those threats are explored in detail. Countermeasures for Information Security Vulnerabilities form the framework of People, Process, Computer level, Network technology and Encryption are discussed.

Prereqs: CIS 31200 with min grade of D-

CIS 42200 Network Management

Class:2 Lab:2 Credit:3

This course provides an integrated, comprehensive, up-to- date coverage of the techniques, standards, models for the network management vital to communications, networking, and services including current trends of next generation converged, networks and emerging 4GM wireless technologies. The classroom instruction provides a practical approach of both the principles and practices of network management from different perspectives.

Prereqs: CIS 42000 with min grade of D-

CIS 42300 Structured Systems Analysis And Design

Class:2-3 Lab:0-2 Credit:3

Attributes: Credit By Exam

This is the first semester of a two-semester sequence in the advanced study of the system development life cycle. Topics include analysis and design using structured techniques to analyze existing information systems, preparation of the associated structured documentation to design new computer information systems, and preparation of the technical specification to implement the system.

Prereqs: CIS 35400 with min grade of D-

CIS 42400 Object Oriented Analysis Design

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

This is an in-depth study of the system development life cycle using object oriented analysis and design techniques. Other topics include project management, software quality assurance, computer- assisted software engineering (CASE), and other state-of- the-art techniques that the software engineering profession introduces to support the system development process.

Prereqs: CIS 35400 with min grade of C-

CIS 42500 Information Systems Change Management.

Class:3 Lab:0 Credit:3

The course covers the purpose and techniques of IS change management and its impact on business planning and functions.

Prereqs: CIS 40000 with min grade of D-

CIS 42600 Applied Software Development Project

Class:2-3 Lab:0-2 Credit:3

Attributes: Credit By Exam, Experiential Learning, ExL-Design Projects

A capstone course integrating the knowledge and abilities gained through the other computer related courses in the curriculum within a comprehensive system development project.

Prereqs: CIS 42400 with min grade of C- OR CIS 32300 with min grade of C-

CIS 42700 System Development Project.

Class:3 Lab: Credit:3

This course represents a capstone course that integrates the knowledge, skills and abilities gained through the computer-related courses in the curriculum within a comprehensive system development project.

CIS 44000 Advanced Network Design

Class:3 Lab:2 Credit:4

This course will emphasize common carrier systems, ATM, Systems Network Architecture (SNA), Fiber Distributed Data Interface (FDDI), and Integrated Services Digital Network (ISDN). New developments in data communications will be discussed. Students will design and simiulate a wide area network using a simulation software package.

Prereqs: CIS 31000 with min grade of D-

CIS 44100 Web Server Management

Class:2 Lab:2 Credit:3

Pre-requisite: CIS 14000, CIS 24100 and CIS 28600 This course is a study of the implementation, configuration and maintenance of Web server software. Students will install and configure a Web server. Topics include server layout and design considerations, cgi and back-end program management, data collection and management, backup and recovery procedures, security and secure transactions and logging and auditing.

Prereqs: CIS 14000 with min grade of D- AND CIS 24100 with min grade of D- AND CIS 28600 with min grade of D-

CIS 44200 Internet/Web Security

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Pre-requisite: CIS 14000, CIS 24100, and CIS 28600. A.S. Degree in CIW Internet/Web Technology This course is a study of existing methods and techniques for securing various components of computerized systems. Topics include types of attacks, monitoring and detection techniques, encryption methods, data security, authentication techniques and current trends in security.

Prereqs: CIS 14000 with min grade of D- AND CIS 24100 with min grade of D- AND CIS 18700 with min grade of D-

CIS 44500 Network Security

Class:2 Lab:2 Credit:3

Pre-requisiste: CIS 31000 This course is a study of exisiting methods and techniques for developing and implementing a security policy and for securing various components of computerized systems. Topics include types of attacks, monitoring and detection techniques, encryption methods, data security, authentication techniques and current trends in security. Labs will emphasize various hardware and software security and data prevention packages.

Prereqs: CIS 31000 with min grade of D-

CIS 44600 Web Development III

Class:2 Lab:2 Credit:3

This course is a study of advanced methods and techniques for developing and implementing Web and network-based applications. New topics and techniques in Web development are discussed. Extensive laboratory exercises and a comprehensive semester project are assigned.

CIS 44700 Disaster Recovery and Contingency Plans for Information Tech

Class:2 Lab:2 Credit:3

This course provides methods to identify vulnerabilities and take appropriate countermeasures to prevent and mitigate information technology failure risks for an organization. Topics include: disaster recovery principles, development of policies and procedures, preparation of disaster recovery plan, testing and rehearsal of the plan, and actually recovering

from a disaster. The classroom instruction provides a practical approach to develop disaster recovery and contingency plans.
Prereqs: CIS 44500 with min grade of D-

CIS 44900 Information Technology Security Management

Class:2 Lab:2 Credit:3
This course covers techniques for architecture design, security infrastructure, and policy design. The course provides a practical approach through case scenarios of both the principles and practice of design, implementation, testing and management of security technologies and security services.
Prereqs: CIS 44700 with min grade of D-

CIS 45100 Computer Forensics

Class:2 Lab:2 Credit:3
This course covers methods to properly conduct a computer forensics investigation. This course uses case scenarios to illustrate the principles and practice of investigation. Topics include: digital evidence and controls, processing incidents using computer forensics tools, investigation reports and forensic analysis.
Prereqs: CIS 44900 with min grade of D-

CIS 45300

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam

CIS 45400

Class:2-3 Lab:0-2 Credit:3
Attributes: Credit By Exam

CIS 45700 Database Administration

Class:2 Lab:2 Credit:3
Prerequisites: CIS 14000, CIS 25300, and CIS 28600 This course covers database administration tasks and techniques. Students will install and implement two relational database management systems. Topics include RDBMS architecture, installation, creating databases, configuration, migrating data, database object management, user account management, tuning and backup and recovery.
Prereqs: CIS 14000 with min grade of D- AND CIS 25300 with min grade of D- AND CIS 28600 with min grade of D-

CIS 46000 Programming Systems

Class:3 Lab:0 Credit:3
A broad overview of some basic and advanced concepts in higher level languages and their design. Emphasis is on issues and breadth rather than on details. Topics cover basic characteristics of programming languages, formal methods of defining syntax and semantics, broad language areas of string and list processing, formula manipulation, on-line commands, simulation, concepts of languages for specialized application areas and for program validation, and current research topics and technical issues.

CIS 46100 Enterprise Solutions

Class:2 Lab:2 Credit:3
A course exploring enterprise-level solutions and trade-offs in achieving design goals. The solution patterns and best practices will be discussed. Topics include the design considerations in achieving application availablity, scalabilty and reliability; technical issues involved in transaction, testing, optimization, and deployment; the practical solutions of different architectures, component-based multi-tiered solutions, and distributed applications.
Prereqs: CIS 34100 with min grade of D- OR CIS 35500 with min grade of D- OR CIS 36300 with min grade of D-

CIS 46300 Introduction To Mobile Programming

Class:2 Lab:2 Credit:3
This course is an introduction to programming applications for mobile devices. Topics include a survey of various mobil development environments, with a concentration on the fundamentals of Android app development. Studens are expected to be familiar with object-oriented programming concepts, preferably using Java or similar programming language. Programming exercises are emphasized.
Prereqs: CIS 24100 with min grade of C- AND CIS 26300 with min grade of C-

CIS 46600 Multithreading Programming

Class:2 Lab:2 Credit:3

This course covers multithreaded programming and distributed computing techniques. Topics include a review of object-oriented analysis and design, Universal Modeling Language (UML), Application Programming Interfaces (API), implementation of object-oriented design patterns, factorization, generalization, and object-oriented frameworks.

Prereqs: CIS 36300 with min grade of D- AND CIS 30100 with min grade of D-

CIS 46900 Operating Systems Programming

Class:2 Lab:2 Credit:3

This course will prepare students for being a network administrator. Specific topics of the course will include structure of scripting languages, scripting tools, and scripting uses. Scripts will be utilized to configure and update server and client operating systems types. The strengths and weaknesses of scripting techniques and tools will be discussed.

Prereqs: CIS 31000 with min grade of D-

CIS 48000 Managing Information Technology Projects

Class:2 Lab:2 Credit:3

This course introduces the advanced application of knowledge, skills, tools, and techniques project managers use to plan, staff, estimate and manage information technology projects. Students will apply project management technology and techniques to business problems.

Prereqs: CIS 18000 with min grade of D-

CIS 48300 Computer Hardware/Software Selection

Class:4 Lab:0 Credit:4

Attributes: Credit By Exam

The course is designed to provide EDP technical personnel with information required to plan, design, and select computer systems. Included are the formulation of corporate requirements, configuration of hardware and software to satisfy stated requirements, comparison and evaluation of hardware and software, installation considerations, implementation procedures, performance measurement approaches and contract negotiations.

CIS 48600

Class:2-3 Lab:2 Credit:3

CIS 49000 Senior Project

Class:1-4 Lab:1-4 Credit:1-4

Attributes: Variable Title

Independent study for seniors who desire to execute a complete computer oriented project.

CIS 49500 Internship in Computer Information Systems

Class:0 Lab:0 Credit:1-4

Attributes: Experiential Learning, ExL-Internship, Variable Title

A special couse in selected areas of computer information systems, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization.

CIS 49700 Computer and Informational Systems

Class:1-4 Lab:0 Credit:1-4

Hours, credit, and subject matter to be arranged by staff.

CIS 49900 Undergraduate Research In Computer Information Systems

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title

Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance.

CMET 10000 Freshman Experience for CMET

Class:1 Lab:0 Credit:1

This course will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration and critical thinking.

CMET 10100 Technical Computations

Class:1 Lab:0 Credit:1

A study of elements from algebra and trigonometry appropriate to surveying, estimating, statics, and other construction-related courses. Graphs and reports are included. Additionally, word processing, spreadsheets, and PowerPoint presentations will be included. The correct use of caculators will be addressed.

CMET 10200 Technical Computations.

Class:2 Lab:0 Credit:2

A study of elements from algebra and trigonometry appropriate to surveying, estimating, statics and other construction-related courses. Graphs and reports are included. Additionally, word processing, spreadsheets and PowerPoint presentations will be included. The correct use of calculators will be addressed.

CMET 10300 Introduction to Construction Management

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Freshman Experience, Gen Ed-Wellness Education, Gen Ed-Univ/Personal Resources, Gen Ed-Wellness, General Education

This course will provide students with an introduction to the construction management discipline and prepare students for the program curriculum. Additionally, this course will serve as a Freshman Experience course, and will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration and critical thinking.

CMET 19000 Construction Experience I

Class:1 Lab:0 Credit:1

Attributes: Credit By Exam

Minimum of 10 weeks work experience in the construction industry, plus written report of directed academic project.

CMET 19800

Class:0 Lab:0 Credit:1-5

CMET 20000

Class:0 Lab:0 Credit:0

CMET 25000

Class:0 Lab:0 Credit:0

CMET 28000 Quantity Survey And Estimating

Class:2 Lab:3 Credit:3

A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Introduction to estimating labor and cost.

Prereqs: ARET 25000 with min grade of C OR CET 20800 with min grade of C

CMET 29100 Construction Experience II.

Class:1 Lab:0 Credit:1

Minimum of 10 weeks work experience in the construction industry, plus written report of directed academic project.

CMET 29800

Class:0 Lab:0 Credit:1-5

CMET 30000

Class:0 Lab:0 Credit:0

CMET 32500 Structural Applications

Class:2 Lab:3 Credit:3

Techniques in analyzing statically determinant and indeterminate structures with a discussion of moment distribution. Standard design procedures for wood, steel, and concrete structures. Sizing of beams, columns and connections.

Prereqs: CET 28000 with min grade of C

CMET 33500 Shoring, Formwork And Scaffolding Design And Safety

Class:3 Lab:0 Credit:3

Fundamentals in the design of shoring; concrete forms for beams, columns, slabs and walls; the design and selection of scaffolding systems. A discussion of erection and fabrication techniques with an emphasis upon safety.

Prereqs: CET 28000 with min grade of C AND CET 33100 with min grade of C AND CMET 34100 with min grade of C

CMET 34100 Construction Operations

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Management, methods and equipment used in the construction of buildings, earthworks, bridges and roads. Contractor organization, job management, and safety. Excavation, formwork, concrete, masonry, and steel erection methods.

CMET 34400 Construction Inspection

Class:2 Lab:3 Credit:3

Attributes: Credit By Exam, Experiential Learning, ExL-Service Learning

Inspection procedures as applied to contracted construction, and the role inspection plays in the execution of the completed contract. The laboratory period is used for demonstration, guest lecturer presentations, and for field trips to construct sites, fabrication shops, and testing laboratories.

Prereqs: ARET 27600 with min grade of C AND CMET 34100 with min grade of C

CMET 35000

Class:0 Lab:0 Credit:0

CMET 39000 Construction Experience III

Class:1 Lab:0 Credit:1

Minimum of ten weeks work experience in the construction industry, plus written report of directed academic project.

CMET 39800

Class:0 Lab:0 Credit:1-5

CMET 40000

Class:0 Lab:0 Credit:0

CMET 42000 Construction Law

Class:3 Lab:0 Credit:3

This course introduces general construction law and regulations and legal procedures relevant to construction projects. The course covers wide-ranging legal aspects during a construction project from planning, design, engineering, and construction phases through the post- construction phase. Topics in the course include typical legal aspects in the construction industry; contractural liabilities from owners, design professionals, and contractors' perspectives; common issues for disputes and claims; suggestions to resolve legal arguments; and ethics in the construction industry.

Prereqs: CMET 34400 with min grade of D-

CMET 44200 Construction Costs and Bidding

Class:2 Lab:3 Credit:3

A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Estimating total job costs (material and labor, quality survey, overhead, subcontracts) and bidding practices of the construction industry. Topics in construction law and ethics.

Prereqs: CMET 34100 with min grade of C

CMET 44500 Construction Management I

Class:3 Lab:0 Credit:3

Business policy and problems relating to construction companies. Includes contractors' organization, financial management, project management, supervision, cost analysis, and equipment economics, and topics in construction law and ethics.

Prereqs: CMET 34400 with min grade of C AND CMET 44200 with min grade of C AND CMET 45000 with min grade of C

CMET 45000 Construction Scheduling.

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Corequisite: CMET 34100. A study of the planning and control of construction projects. Time schedules for materials, labor and equipment, expediting material delivery, bar charts, Critical Path Method (CPM) scheduling. Precedence diagrams and Program Evaluation Review Techniques (PERT). The course emphasizes the use of computers for scheduling and updating of the construction process.
Prereqs: CMET 34100 with min grade of C

CMET 48700 Design And Development For Facility Management

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam
A study of the functional relationships required to design modern commercial, office, hospital, industrial and institutional facilities. Development and leasing of commercial buildings. Design of office interiors including an introduction to furniture and communications systems. A basic introduction to drafting and blueprint reading.

CMET 48900 Senior Project Survey

Class:1 Lab:0 Credit:1
Students will develop a topic for the following design project, CMET 49000. Students will establish project scope, general and specific objectives, literature review and background, and establish time schedules for completion of the project. Students are encouraged to develop alternative proposals. Students will analyze a previously completed senior project.

CMET 49000 Senior Project

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The development of a project which will combine the skill and knowledge gained from various areas of study. The student will be expected to present a project which has been approved by his faculty advisor to a panel of departmental faculty chosen by the advisor. This presentation should include graphical material as well as oral and written communication.
Prereqs: CMET 48900 with min grade of C

CMET 49300 Facility Operations, Scheduling And Management

Class:2 Lab:3 Credit:3
Attributes: Credit By Exam
An introduction to the management, methods and equipment used in the remodeling or construction of commercial, office and institutional buildings. A study of the planning and control of construction projects including time schedules for materials, labor, equipment and maintenance; expediting material delivery; bar charts; Critical Path Method (CPM); and Program Evaluation Review Techniques (PERT) for scheduling. Business policy problems as they relate to facilities as well as financial management, project management, supervision, cost analysis and equipment costs will be discussed.
Prereqs: MGMT 20000 with min grade of C AND ARET 28300 with min grade of C AND CMET 49200 with min grade of C

CMET 49500 Introduction To Facility Management

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
An introduction to topics directly related to the management of large facilities with an emphasis on architectural and engineering systems, maintenance, cost management, life safety, and grounds and landscaping maintenance.

CMET 49700

Class:0 Lab:0 Credit:0-4
Attributes: Variable Title

CMET 49800

Class:0 Lab:0 Credit:1-5

CMET 49900 Special Assignments

Class:0-4 Lab:0 Credit:1-4

Attributes: Credit By Exam
Hours, subject matter and credit to be arranged by staff. Course may be repeated for credit up to nine hours.

CMET 50100 Temporary Structures in Construction

Class:3 Lab:0 Credit:3
This course is designed for students who want to learn analytical methods and techniques applicable in construction operations. It covers fundamental simulation algorithms and computer-aided quantitative analysis methods to be used for construction operations. Topics to be included are: data analysis, operational analysis tools and simulation techniques that require comprehensive group projects involving modeling and analyzing actual construction operations. Course may be offered in classroom based, distance or hybrid format.

CMET 50800 Highway Construction & Maintenance

Class:3 Lab:0 Credit:3
This course is designed for students who are seeking to begin their careers in highway engineering and construction industry. Focused on the core issues of highway construction and maintenance, the course covers the entire highway construction project life cycle from the planning stage to key maintenance issues of the highway system. Detailed topics to be covered include primary elements of highway planning, principles of highway and pavement design, typical road plans and specifications, pavement parameters, and the key issues of highway construction and maintenance. This course also requires a term project where students can experience a real highway construction project.

CMET 52000 Green Construction

Class:3 Lab:0 Credit:3
A survey of LEED@ Green Building Rating System. An overview of the system will be discussed and each environmnetal category will be covered. An in-depth analysis of each possible credit in each category will be discussed. Students will develop strategies for each credit's attainment; listing the advantages and disadvantages of each strategy. Necessary documentation for credit attainment will also be covered. Graduate students with insufficient background may be required to take some leveling courses.

CMET 54100 Advanced Construction Operations

Class:3 Lab:0 Credit:3
This course is designed for students who want to learn analytical methods and techniques to be applicable in construction operations. It covers fundamental simulation algorithms and computer-aided quantitative analysis methods to be used for construction operations. Topics to be included are: data analysis, operational analysis tools, simulation techniques, which require comprehensive group projects that involve modeling and analyzing actual construction operations. (Course may be offered in classroom-based, distance or hybrid format)

CMET 58100 Workshop in Construction Mgmt & Engineering Technologies

Class:1-8 Lab:0 Credit:1-8
Attributes: Variable Title
This course is an advanced study of technical and professional topics. Emphasis is on new development relating to technical, operational, and training aspects of industry and technology education. Permission of instructor required.

CMET 59000 Special Problems in Construction Management &

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title
Engineering Technologies Intensive individual study of selected current developments and issues in Construction Management & Engineering Technology. Does not subsittute for either M.S. thesis or M.S. project credit. A faculty sponsor is required for this course. Permission of instructor required.

COM 10300 The Freshman Seminar in Communication

Class:1-3 Lab:0 Credit:1-3
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
This course provides entry-level COM majors with skills and materials deemed important to their ultimate success in Communications at Purdue University Calumet.

COM 11400 Fundamentals of Speech Communication

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Speech Communication, Gen Ed-Speaking/Listening, General Education, TransferIN
A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through discussion to speaking in standard speaker-audience setting.

COM 20100 Introduction to Media Studies

Class:3 Lab:0 Credit:3
introduces student to the various fields in Mass Media including (but not limited to) Digital Media, Film, Journalism, the Internet, Radio, and Television. This course will survey the basic principles, theories, and processes of each specialized area.

COM 20200 Electronic Media

Class:3 Lab:0 Credit:3
Origin, development, nature, and function of radio and television in America.

COM 21000 Debating Public Issues

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods, and bibliography, identification and analysis of issues, construction or organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases.
Prereqs: COM 11400 with min grade of C

COM 21100 Practicum In Speech Communication Activities

Class:0 Lab:0 Credit:1
Practice and training in the theory and techniques of applied communication activities. May include projects in organizational communication or public relations, public presentations, or participation in competitive forensic events.

COM 21300 Voice And Diction

Class:3 Lab:0 Credit:3
Introduction to the contemporary theories of interpersonal communication, with particular focus on the implications of the theories for the process of interpersonal and intrapersonal communication. Investigation and comparative analysis of rhetorical theories, linguistic theories, behavioral theories, quantitative theories and psychological theories will be emphasized, as will be construction and analysis of models of communication.
Prereqs: COM 11400 with min grade of C

COM 21400 Comparative Theories Of Interpersonal Communication

Class:3 Lab:0 Credit:3
Introduction to the contemporary theories of interpersonal communication, with particular focus on the implications of the theories for the process of interpersonal and intrapersonal communication. Investigation and comparative analysis of rhetorical theories, linguistic theories and psychological theories will be emphasized, as will be construction and analysis of models of communications.
Prereqs: COM 11400 with min grade of C

COM 22500 Introduction To Rhetoric And Social Influence

Class:3 Lab:0 Credit:3
A study of rhetoric as an agent of social change. Analysis of strategies and techniques of non-oratorical as well as oratorical forms of contemporary rhetorical situations.
Prereqs: COM 11400 with min grade of C

COM 22800 Introduction to Communication Studies

Class:3 Lab:0 Credit:3
will introduce students to the various fields of Communication discipline including (but not limited to) Interpersonal Communication, Marketing Communication, Organizational Communication, Performance Studies, Public Relations, Rhetoric and Small Group Communication. This course will survey the basic principles, theories and processes of each specialized area.
Prereqs: COM 11400 with min grade of C

COM 23600 Media and Culture.

Class:3 Lab:0 Credit:3

This course surveys film, music, art, popular magazines, television and other media in terms of their symbiotic relationship to diverse cultural practices including, among others, religion, romance, dance, sport, recreation, hobbies, and cuisine, and their connection to broader ethnic, gender and class cultural expressions. To understand how media represent, express and contribute to contemporary culture practices, students will consider mass market novels, professional sports, museums, music videos, talk radio, Hollywood and independent film, narrowcast cable television, websites, and other mass media genre.

COM 24200 Introduction to Broadcast News

Class:3 Lab:0 Credit:3

This course assists students in writing for broadcast journalism, and broadcast delivery training, and offers a chance for exposure to area television and radio journalists.

COM 25000 Mass Communication And Society

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam, Gen Ed-Social/Behavioral, Gen Ed-Technology in Society, General Education, TransferIN

A survey of the print, broadcast and film media in their relationship and influence on society. Study topics include: mass communication theories, documentaries, commercialism, news media, media effects and control, feedback, educational broadcasting, and audience analysis.

COM 25300 Introduction To Public Relations

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Theories, methods, and practice of public relations and their application in industry, government, education, social agencies, and other institutions.

COM 25500 Introduction To News Reporting And Writing

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam

Fundamentals of gathering, evaluating, writing, and editing news. (Basic typing ability desirable.)

Prereqs: ENGL 10800 with min grade of C OR ENGL 10500 with min grade of C

COM 25600 Introduction to Advertising

Class:3 Lab:0 Credit:3

This survey course provides the needed foundation for advanced courses in advertising, communication and marketing. The course examines the structure of advertising messages, how they are adapted to specific audiences, and the social setting in which they occur.

COM 29000 Special Topics in Communication

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Topics will vary.

COM 30000 Introduction To Research In Communication

Class:3 Lab:0 Credit:3

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability and validity of both measurement and research design in communication research. Helpful to have taken a communication theory course such as COM 21400, COM 32000, COM 20100, COM 25000. It is not recommended to take COM 30000 concurrently with Com 35300

Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 30100 Applied Communication Research

Class:3 Lab:0 Credit:3

Students in applied Communication Research will be exposed to specific communication research methodologies in more

depth and detail than possible in the introductory communication research course, COM 30000. Students in will undertake research projects which apply research concepts and methods obtained in COM 30000 and expand their knowledge of the art and practice of communication research.
Prereqs: COM 11400 with min grade of C AND COM 30000 with min grade of C

COM 30101 Political Economy of Global Media

Class:3 Lab:0 Credit:3
Political economy of global media studies the structures and practices of media and the functions and uses of the global culture. Media structures, production and programming norms, and diverse regional and international soci-cultural trends and identified.
Prereqs: COM 11400 with min grade of D- AND COM 20100 with min grade of D- AND COM 32700 with min grade of D-

COM 30102 Media Globalization and Development

Class:3 Lab:0 Credit:3
Media globalization and development explores multiple theories in international developmental history and cultural practice from a media perspective. Media are studied as both the means to development and an industry of development, globally, and nationally.
Prereqs: COM 11400 with min grade of D- AND COM 20100 with min grade of D- AND COM 32700 with min grade of D-

COM 30200 Publications Design

Class:3 Lab:0 Credit:3
This course focuses on the design, layout and production of various documents using personal computers. Emphasis is given to principles of publications design and page make-up, typography, and the use of personal computers in business publishing.

COM 30500 News Editing

Class:2 Lab:2 Credit:3
Study of, and practice in, the fundamentals of editing copy for and display of news in the mass media.
Prereqs: COM 25500 with min grade of C

COM 30600 Advanced News Reporting And Writing

Class:3 Lab:0 Credit:3
Advanced study of, and practice in, methods of journalistic research and presentation; preparation of in-depth news stories based on student research.
Prereqs: COM 25500 with min grade of C

COM 30700 Written And Oral Communication For Engineers

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education
Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics.
Prereqs: ENGL 10400 with min grade of C AND COM 11400 with min grade of C AND (ECE 27500 with min grade of C AND ECE 37000 with min grade of C) AND (ME 30500 with min grade of C OR CE 27300 with min grade of C)

COM 30900 Visual Communication

Class:3 Lab:0 Credit:3
Visual Language is universal. This course will allow students to define visual language through investigating various visual mediums such as still images, film and television. Art elements of color, texture, space, composition, and design will be addressed. Various symbols and visual cues used to communicate messages will also be discussed.

COM 31000 Family Communication

Class:3 Lab:0 Credit:3
The application of theories of interpersonal communication to family life. Emphasis on feedback, empathy, and trust as contributing factors to effective communication within families. A case study approach is used.

Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 31400 Advanced Presentational Speaking

Class:3 Lab:0 Credit:3

Development of a marked degree of skill in the composition and delivery of various types of speeches including presentations in corporate board rooms, orientation meetings, banquet halls, public forums. Special emphasis on speeches related to the student's major vocational area.

Prereqs: COM 11400 with min grade of C

COM 31500 Speech Communication Of Technical Information

Class:3 Lab:0 Credit:3

The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audio-visual materials in such presentations.

Prereqs: COM 11400 with min grade of C

COM 31800 Principles Of Persuasion

Class:3 Lab:0 Credit:3

Persuasion and its effects on behavior with emphasis on evidence and reasoning and on emotional and personal proof; practice in critical reception as well as effective composition of persuasive discourse.

Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 31900 The Rhetorical Tradition

Class:3 Lab:0 Credit:3

A historical survey of major rhetorical theory as it relates to the development of Western civilization, with major emphasis on Aristotle and the New Rhetoric.

COM 32000 Small Group Communication

Class:3 Lab:0 Credit:3

A study of group thinking and problem-solving methods; participation in and evaluation of committee and informal discussion groups.

Prereqs: COM 11400 with min grade of C

COM 32200 Leadership in Organization

Class:3 Lab:0 Credit:3

This program serves as the foundation for developing core leadership skills. Focusing on the dynamics of leadership development within a personal, academic, community, and organizational context, students will learn to apply basic leadership skills through a series of experiential learning sessions and lectures. These core skill areas include written, oral and interpersonal communication; processing experiences into practical application; understanding leadership styles and roles; human behavior; on-going self-assessment; diversity, as a value; basic technical competencies; and effective life/time management.

Prereqs: COM 11400 with min grade of C

COM 32300 Business And Professional Speaking

Class:3 Lab:0 Credit:3

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate.

Prereqs: COM 11400 with min grade of C

COM 32500 Interviewing: Principles And Practice

Class:3 Lab:0 Credit:3

Theory and practice of methods in selected things: informational, employment, and persuasive. Emphasis on communication between two persons, questioning techniques and the logical and psychological bases of interpersonal persuasion.

Prereqs: COM 11400 with min grade of C

COM 32600 Speechwriting

Class:3 Lab:0 Credit:3

By studying the rhetorical and performative elements for creating a successful speech, students will learn various speechwriting strategies that can be applied in political or organizational contexts.
Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 32700 International Communication

Class:3 Lab:0 Credit:3

Introduction to the historical development of international communication for trade and diplomacy to the globalization of media markets and media models in news and entertainment. Modernization, developmental, dependency, hegemony, free flow of information, political economy, and other historical, administrative and critical perspectives will also be discussed. Contemporary international media practices, including foreign direct investment cultural hybridity and contraflow.
Prereqs: COM 20100 with min grade of C

COM 33000 Theories Of Mass Communication

Class:3 Lab:0 Credit:3

An examination of mass communication theories and theorists. Readings and discussion of McLuhan, Lippman, LaFleur, Lazarsfeld, Schramm, Stephenson, and other significant contributors.
Prereqs: COM 20100 with min grade of C

COM 33100 Audio Production

Class:1-2 Lab:4 Credit:3

Basic principles of producing, directing, and writing for radio. Treats program types, production methods, techniques of the sound studio, principles of directing radio programs, and laboratory practice in production and direction.
Prereqs: COM 20100 with min grade of C

COM 33200 Television Production

Class:1 Lab:4 Credit:3

Basic principles of producing, writing, and directing for television. Classroon television productions are produced in the Purdue Calumet televison studio. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.
Prereqs: COM 33100 with min grade of C AND COM 20100 with min grade of C

COM 33400 Journalism For The Electronic Media

Class:2 Lab:2 Credit:3

The development and practice of electronic journalism with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary.
Prereqs: COM 20100 with min grade of C

COM 34300 Fundamentals Of Oral Interpretation

Class:3 Lab:0 Credit:3

A study of basic theories of oral interpretation including the analysis and presentation of literature.
Prereqs: COM 11400 with min grade of C

COM 34700 Radio And Television Performance

Class:1 Lab:4 Credit:3

This course addresses the relationship between the producer, the director, and the talent in a production situation. Practice in performing for radio and television, as well as auditioning talent is the focus of this class.
Prereqs: COM 20100 with min grade of C OR COM 25000 with min grade of C

COM 35000 Intercultural Communication

Class:3 Lab:0 Credit:3

This course examines the communication process used by individuals from various cultures. The class will explore the current theories in intercultural communication which demonstrates strategies for interacting with diverse cultures and ideas.
Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 35200 Mass Communication Law

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Study of Anglo-American traditions and trends, as well as current American conditions of the laws of libel, privacy, fair comment and criticism, privilege, property rights, and copyright as many factors affect the print journalist and the broadcaster. Emphasis is on existing state and federal regulations and precedents.
Prereqs: COM 20100 with min grade of C OR COM 25000 with min grade of C

COM 35300 Problems In Public Relations

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Practicum
Approaches to problems in public relations as they occur in industry, government, education, social agencies, and other institutions. It is not recommended to take COM 30000 concurrently with COM 35300.
Prereqs: COM 25300 with min grade of C

COM 36500 Communication and Aging

Class:3 Lab:0 Credit:3
Study of communication with and among the elderly, within the contexts of family, social networks, and social and health providers. Effects of communication on the aged and the perception of aging will be discussed.
Prereqs: COM 11400 with min grade of C

COM 37100 Health Communication

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Exploration of the communication competencies needed by health care professionals (doctors, dentists, nurses, social workers, therapists, etc.) in the performance of their health care tasks. The course will emphasize helper-helpee interviewing, verbal and nonverbal skills, group interaction, intercultural communication, health care organizations, and therapeutic communication.
Prereqs: COM 11400 with min grade of C

COM 39000 Special Topics in Communication

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
Topics will vary.

COM 40200 Dark Side of Interpersonal Communication

Class:3 Lab:0 Credit:3
The dark side of communication explores topics in the study interpersonal relationships that are deemed dysfunctional or pathological. the course is meant to initiate a dialogue an create an understanding about the causes and consequences of the darker aspects of relationships.

COM 40300 Communication Ethics

Class:3 Lab:0 Credit:3
Through research and discussion, students will develop an understanding of the ethical issues confronting the mass media and will formulate a framework which can be used for resolving ethical questions in their professional work.
Prereqs: COM 20100 with min grade of C OR COM 25000 with min grade of C

COM 40500 The Rhetoric Of Women's Rights

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
An analysis of the major arguments and persuasive techniques used in the American women's movement and continuing through the current struggle for equal rights. Included will be major speeches as well as non-oratorical forms of rhetorical messages.
Prereqs: COM 11400 with min grade of C

COM 41101 Introduction To Writing In Health Sciences

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects

This course provides an introduction to four areas of writing in the health sciences; patient education materials, pharmaceutical documentation, medical editing, and medical journalism. The course wil involve lectures, guest speakers teamwork, and a real work project.
Prereqs: ENGL 10500 with min grade of C- OR ENGL 10800 with min grade of C-

COM 41800 Communication And Gender

Class:3 Lab:0 Credit:3
An exploration of how men and women differ in the communication behavior by examination of an array of communication concepts and contexts. An exploration of gender differences as developed through our perceptual processes, our socialization processes, and our communication processes. To provide the student a better understanding and awareness of the gender differences in order to improve combination behaviors and to enable better understanding of why effective communication between men and women is often difficult to accomplish.
Prereqs: COM 11400 with min grade of C AND COM 20100 with min grade of C

COM 42000 Introduction To Organizational Communication

Class:3 Lab:0 Credit:3
Prerequisite: COM 22800 or consent of instructor. Examination of the communication concepts and practices related to the function and success of organizations. Formal and informal channels will be analyzed on the basis of use, source content, potency and trustworthiness. Readings and analyses will focus on goals, reliability and applicability appropriate of organizational settings. Types of organizational settings. Types of organizations to be studied will include industrial giants, governmental agencies, social and educational administrative bodies, and formal task groups.
Prereqs: COM 22800 with min grade of C AND COM 11400 with min grade of C

COM 42500 Rhetorical Criticism

Class:3 Lab:0 Credit:3
A comparative study of the writings on traditional and contemporary rhetorical criticism. Students will have an opportunity to describe, analyze, interpret, and evaluate persuasive discourse.
Prereqs: COM 11400 with min grade of C AND COM 20100 with min grade of C

COM 42600 Identity & Communication

Class:3 Lab:0 Credit:3
Identity and Communication explores communication process and strategies related to race, ethnicity, gender, class, sexuality, international, and liminal identity. The course will focus on identity intersections and how these intersections affect our understanding of communication.
Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 42900 Advertising Campaigns

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Emphasis on the preparation of a complete advertising campaign for a business or non-profit organization. The student will be able to integrate marketing research and segmentation, media, and promotion plans, strategy, creative and presentation in a unified campaign to serve a local or national organization.
Prereqs: COM 25600 with min grade of C

COM 43400 Practicum in Radio/TV

Class:1 Lab:4 Credit:3
Attributes: Experiential Learning, ExL-Practicum
Students engage in Independent Study projects and actual production of a television program under the direction of a professor or Purdue Calumet television studio manager.
Prereqs: COM 33100 with min grade of C AND COM 33200 with min grade of C

COM 43600 Script Writing

Class:3 Lab:0 Credit:3
Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials.
Prereqs: ENGL 10500 with min grade of C

COM 43700 Performance Practicum

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Practicum
extends performance knowledge and skills acquired in COM 343 , Fundamentals of Oral Interpretation. Students will participate as scriptors, directors, and performers in a campus and community performances.

COM 43900 Focus Group Research

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
Prerequisites: COM 11400 or 11500 In , students will learn when to use and how to conduct this specific method of qualitative inquiry. Through theory and practice, this course will provide the information necessary for students to conduct focus groups in organizational academic contexts.
Prereqs: COM 11400 with min grade of C

COM 44100 Advanced Television Production

Class:1 Lab:4 Credit:3
Attributes: Experiential Learning, ExL-Design Projects, ExL-Internship
Students will produce, direct and edit programs which will be aired via cable or closed circuit. An emphasis on remote television production and linear editing. Students will produce, direct and edit various programs, which will be suitable for airing.
Prereqs: (COM 20100 with min grade of C OR COM 25000 with min grade of C) AND COM 33100 with min grade of C AND COM 33200 with min grade of C

COM 44300 Advertising Media

Class:3 Lab:0 Credit:3
This course is an introduction to advertising media planning in traditional and new media to creatively and effectively reach targeted prospects. Attention is given to media charactertistics, media terminology, scheduling, testing, and buying efficiencies. Included in the use of syndicated media research and development of media plans.
Prereqs: COM 25600 with min grade of C

COM 44500 Television Editing

Class:1 Lab:4 Credit:3
A study of the history of editing and the practical application of current editing techniques. Students will learn to apply both analog and digital non-linear editing techniques to class assignments.
Prereqs: (COM 20100 with min grade of C OR COM 25000 with min grade of C) AND COM 33100 with min grade of C AND COM 33200 with min grade of C

COM 44600 Advertising Management

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
This course considers advertising from the prespective of managers and practitioners responsible for identifying and solving the advertising problems of a business. The course emphasizes the application of concepts, such as the planning of advertising strategy, the execution of target marketing, budgeting, creative development and media decisions, with the goal of developing integrated marketing communications campaigns.
Prereqs: COM 25600 with min grade of C AND BA 22400 with min grade of C

COM 44800 Applied Mass Media Research

Class:3 Lab:0 Credit:3
Through an examination of current research in mass media, will provide students with the necessary tools to conduct and critique research that pertains specifically to the mass media. Students will learn how to research a mass media related issue.
Prereqs: COM 20100 with min grade of C AND COM 22800 with min grade of C

COM 45100 Feature Writing

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects

Examination of magazine staff organization, market analysis, and editorial consent. Study of, and practice in, the writing of a variety of nonfiction materials for magazines. Emphasis is on the adaptation of topics and presentation of editorial policies and reader groups.
Prereqs: COM 25500 with min grade of C

COM 45200 Practicum In Journalism

Class:1 Lab:2 Credit:2
Attributes: Credit By Exam
Assigned projects in journalism.
Prereqs: COM 25500 with min grade of C

COM 46000 Advanced Public Relations

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
Research design and implementation skills applied by students individually and in groups to actual business communication problems.
Prereqs: COM 25300 with min grade of C AND COM 25500 with min grade of C

COM 46300 Mass Media Criticism

Class:3 Lab:0 Credit:3
Utilizing the current media criticism theories and models, students will learn how to critique a variety of media genres. Students will examine the social and political messages inherent in media messages.
Prereqs: COM 20100 with min grade of C

COM 46500 Visual Aesthetics in TV and Film

Class:3 Lab:0 Credit:3
This course examines the visual aesthetics of television and film. Topics covered are picture composition, lighting, acting, directing, continuity, cinematography, editing, story line, and costume.

COM 47000 Women In The Media

Class:3 Lab:0 Credit:3
Focusing on the contributions made by women in newspaper, television, film and performance, this course will explore how women are shaping societal and cultural values.
Prereqs: COM 11400 with min grade of C OR COM 20100 with min grade of C OR WOST 12100 with min grade of C

COM 47500 Identity In Film

Class:3 Lab:0 Credit:3
Identity in Film explores the construction of race, ethnicity, gender, class, sexuality, international, and liminal identity in films created by an individual of that particular identity. The course examines identity and communication process through the sensibility of the film's director or writer.
Prereqs: (COM 11400 with min grade of C AND COM 22800 with min grade of C) AND COM 20100 with min grade of C OR COM 23600 with min grade of C OR COM 25000 with min grade of C

COM 49000 Internship In Communication

Class:1-3 Lab:0-6 Credit:1-3
Attributes: Experiential Learning, ExL-Internship
Variable title, variable pattern, variable credit (1-6). Experiential, supervised training in one of the areas of specialization in communication. Students will work in an organization under supervision and are required to devote to the internship the number of hours per week which the organization supervisor and academic coordinator have established. Students will spend a minimum of five hours per week at the place of the internship. Students will be evaluated by the organization supervisor and the academic coordinator. .
Prereqs: COM 11400 with min grade of C AND COM 22800 with min grade of C

COM 49100 Special Topics In Communication

Class:1-3 Lab:0-3 Credit:1-3
Attributes: Variable Title
Variable pattern. (Variable credit, 1-6.)

COM 50800 Nonverbal Communication In Human Interaction

Class:3 Lab:0 Credit:3

An examination of theoretical writings and nonverbal study-e.g., the environmental influence, space and territory relationships, physical behavior, and vocal cues. One unit will specifically concern itself with measurement, recording or transcription methods used in nonverbal study.

COM 51200 Theories Of Interpersonal Communication

Class:3 Lab:0 Credit:3

Review of contemporary theories, analysis of concepts, models, and pertinent research across the broad spectrum of interpersonal communication.

Prereqs: COM 21400 with min grade of B-

COM 51500 Persuasion In Social Movements

Class:3 Lab:0 Credit:3

A study of the concept of persuasion in social movement theory and the role rhetoric has played historically in selected social movements such as suffrage, women's liberation, civil rights, evangelism, and trade unionism.

Prereqs: COM 31800 with min grade of B-

COM 51700 Communication In Politics

Class:3 Lab:0 Credit:3

Development and application of critical standards to the rhetoric employed by candidates for public office. Study of the campaign strategies employed by parties and their candidates at various levels of government.

Prereqs: COM 31800 with min grade of B-

COM 51800 Theories Of Persuasion

Class:3 Lab:0 Credit:3

Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication.

COM 52000 Small Group Communication

Class:3 Lab:0 Credit:3

Survey and critical evaluation of theoretical and empirical literature dealing with human communication within small group settings.

Prereqs: COM 32000 with min grade of B-

COM 52100 Theories Of Rhetoric

Class:3 Lab:0 Credit:3

A comprehensive study of the principle figures, theories, and movements in rhetoric from the classical era to the present.

COM 52500 Advanced Interviewing And Conference Methods

Class:3 Lab:0 Credit:3

Application of modern communication theory to interview situations, with emphasis upon problems involving superior-subordinate relations, information-getting, and interpersonal misunderstanding. Classroom demonstrations based upon real-life cases supplemented by off-campus interviews; practice in briefing techniques.

COM 53100 Special Topics In Mass Communication

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Critical analysis and evaluation of current and continuing problems in both commercial and public mass communication.

Prereqs: COM 25000 with min grade of B-

COM 53400 Comparative Telecommunication System

Class:3 Lab:0 Credit:3

Historical, sociological, and political aspects of various systems of broadcasting throughout the world. Examination of American, Canadian, British, French, German, Soviet, and other broadcast institutions to discover why and how they are regulated and what impact they have on political, social, and economic development.

COM 53700 Educational/Institutional Television

Class:3 Lab:0 Credit:3

Survey of the educational and instructional applications of radio and television materials; analysis of selected problems in the educational uses of the media; analysis and application of production practices as related to the learning process.

COM 54000 Advanced Oral Interpretation

Class:3 Lab:0 Credit:3

Study and practice of the techniques of oral interpretation for public performances. Emphasis on analysis of material, program building, and criticism. Consideration also given to utilizing oral reading techniques in the teaching of literature and speech at the secondary level.

COM 54500 Theories Of Oral Interpretation

Class:3 Lab:0 Credit:3

A study of the theories of oral interpretation of literature that have emerged from the classical period of Greece and Rome to the present. Emphasis on the influence of leaders in the field during the eighteenth, nineteenth, and twentieth centuries.

COM 55900 Current Trends In Mass Communication Research

Class:3 Lab:0 Credit:3

An examination of current research as it contributes to understanding the process and effects of mass communication. Topics covered include gatekeepers and information control, audience selection processes and uses, media content and social learning, the effects of adult programming on children, and the effects of the media on the governmental process.

COM 56000 Rhetorical Dimension Of Mass Media

Class:3 Lab:0 Credit:3

A study of the ways in which rhetorical elements and processes are embodied in and modified by the media of mass communication. The rhetorical functions of print and electronic media are examined individually as well as within the context of specific campaigns and movements.

COM 57400 Organizational Communication

Class:3 Lab:0 Credit:3

Survey of the theoretical and empirical literature dealing with human communication behavior as it occurs within the context of complex organizations. Among topics covered are superior-subordinate communication, communication networks, message distortion, feedback processes, conflict management, semantic and stylistic dimensions of messages, and communication in decision making.

COM 58200 Descriptive/Experimental Research In Communication

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Introduction to modes of quantitative search in communication, including problem formulation, basic measurement concepts, elementary methods of data collection and analysis, and basic designs for descriptive and experimental research, individual and/or group research projects are planned, conducted and reported.

COM 58300 Research And Assessment In Organizational Communication

Class:3 Lab:0 Credit:3

An overview of applied research methodologies in organizational communication, the course focuses on the design of field investigations and the use of self-report measures, network analysis, and interviewing in organizational communication research. These general methodologies are applied to specific research approaches.

Prereqs: COM 57400 with min grade of B- AND COM 58200 with min grade of B-

COM 58400 Historical/Critical Research In Communication

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Introduction to modes of qualitative research in communication, including theoretical assumptions, bibliographical methods, varying approaches to historical and critical inquiry, and the standards and techniques of scholarly writing. Emphasis is placed on historical research during fall semesters and on critical research during the spring semesters.

COM 59000 Directed Study Of Special Problems

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
Directed study of special problems. May be repeated for credit.

COM 61200 Seminar: Special Topics In Interpersonal Communication

Class:3 Lab:0 Credit:3
Attributes: Variable Title
(May be repeated for credit). Intensive study of selected topics varying from semester to semester, from the theoretical and research literature of interpersonal communication. Topics may include communication models, information theory, systems theory, general semantics, sociolinguistics, etc., as they relate to the study of interpersonal communication.

COM 62100 Seminar: Special Topics In Rhetorical Theory

Class:3 Lab:0 Credit:3
Attributes: Variable Title
(May be repeated for credit) Intensive study of selected topics, varying from semester to semester, from the literature of rhetorical theory.

COM 63200 Seminar: Special Topics In Mass Communication

Class:3 Lab:0 Credit:3
Attributes: Variable Title
(May repeat for credit) Intensive study of selected topics, varying from semester to semester, from the literature of mass communication. Topics may include institutional analysis, mass communication law, information diffusion, uses of mass communication, or other issues.

COM 67400 Seminar: Special Topics In Organizational Communication

Class:3 Lab:0 Credit:3
Attributes: Variable Title
(May be repeated for credit.) Intensive study of selected topics, varying from semester to semester, from the theoretical and research literature of organizational (including business and industrial) communication; analysis of recurring communication problems in complex organizations; critique of research findings and methodologies.

COM 69800 Research MS Thesis

Class:0-18 Lab:0 Credit:1-18
Research coursework for MS Thesis.

CRJU 15000 Introduction To The Criminal Justice System

Class:3 Lab:0 Credit:3
A study of the agencies and processes involved in the criminal justice system; legislatures, the courts, the police, the prosecutor, the public defender and corrections. An analysis of the roles and problems of each component with an emphasis on their interrelationships.

CRJU 23000 Introduction To Law Enforcement

Class:3 Lab:0 Credit:3
A study of the major issue and controversies facing police officers. Recruitment, training, new philosophies, strategies, police management, misconduct, accountability, and the future of policing will be discussed. The development of modern policing in America in the past, the present, and future will be discussed.
Prereqs: CRJU 15000 with min grade of D

CRJU 24000 Introduction To Corrections

Class:3 Lab:0 Credit:3
An overview of how and why punishment is administered and an exmination of the functions that our jails and prisons provide. Alternatives incarceration will be reviewed.
Prereqs: CRJU 15000 with min grade of D

CRJU 25000 Introduction To Probation And Parole

Class:3 Lab:0 Credit:3

Examines the organization and operation of the US probations and parole agencies as particular segments of the criminal justice system. Examines probation as a part of the prison/correctional system.
Prereqs: CRJU 15000 with min grade of D

CRJU 30700 Victimology

Class:3 Lab:0 Credit:3
Study and analysis of institutional and other problems and issues relating to victims including the relationship between the victim and the offender, the victim and the criminal justice system, and the victim and various governmental and/or social institutions. The course will also explore how race, class, and gender have impacted victims and often been part of victimization.
Prereqs: CRJU 15000 with min grade of D

CRJU 31500 Incarceration And Society

Class:3 Lab:0 Credit:3
This class focuses on the history of incarceration as a response to crime in the United States. It will look at types of responses to crime. (e.g. laws, regulation, length of incarceration, community services vs. jail time, etc.), changes over time and the impact that both have on society. The issue of recidivism will also be explored.
Prereqs: SOC 10000 with min grade of D

CRJU 32000 Murder In America

Class:3 Lab:0 Credit:3
Analyzes the nature and extent of homicide in the United States. Theoretical perspectives will provide explanations as to the prevalence of murder in our society. Victim and offender characteristics will be examined along with legal responses to homicide.
Prereqs: CRJU 15000 with min grade of D

CRJU 34100 Criminal Investigation

Class:3 Lab:0 Credit:3
This course is designed to develop an analytical understanding of the investigative process. It will merge theoretical and philosophical approaches to crime detection and solution. This course examines judicial efforts to define individual rights and to control enforcement conduct in the investigation and prevention of crime.
Prereqs: CRJU 15000 with min grade of D AND POL 10100 with min grade of D

CRJU 39000 Research In Criminal Justice

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A variable-titled research course organized around semester- long topics selected by the instructor to reflect his/her area ok knowledge and interest.
Prereqs: CRJU 15000 with min grade of D

CRJU 44000 Criminal Law

Class:3 Lab:0 Credit:3
Study of the two branches of criminal law: prodecural and substantive law. The course focuses on the application of substantive criminal law in relation to crimes against people, persons, habitation, property, and public order. Elements of criminal liability, defenses to criminal liability, the doctrine of complicity, and inchoate crimes are also examined in the course.
Prereqs: CRJU 15000 with min grade of D

CS 10000 An Introduction to Computer Science

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
This course is intended to integrate freshman computer science majors into the department; help them adjust to university life; assist them in developing their academic and intellectual capabilities; introduce them to contemporary issues in computer science; provide an overview of the careers open to those with degrees in computer science. This course must be taken Pass/No Pass only. Credit by Exam is not available for this course.

CS 12300 Programming I: Java

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
This course is an introduction to computer science and computer programming with an emphasis on thein scientific basis and applications. The primary language for this course is Java. The topics of the course include: indentifiers, basic data types, operators, expressions, control statements, methods, recursion program structure, arrays, objects, classes, inheritance, polymorphism, and the design of simple graphical user interfaces.
Prereqs: MA 15900 with min grade of C- OR MA 16300 with min grade of C-

CS 12400 Programming II: C++

Class:3 Lab:0 Credit:3
This course is an extension of CS 12300 that introduces the C++ programming language. The topics of the course include: functions, program structure, pointers, objects classes, and inheritance in C++ files, standard template library, streams and the preprocessor.
Prereqs: CS 12300 with min grade of C-

CS 19100

Class:4 Lab:0 Credit:4

CS 20600 Computer Algebra and Programming

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Math or Statistics, Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, Gen Ed-Quantitative Reasoning, General Education
Using a computer algebra system to solve mathematics problems, leaning how to translate mathematical notation and procedures into the language of the computer algebra system. Learning the basic concepts of programming languages, comparing programming concepts with mathematical concepts.
Prereqs: MA 16400 with min grade of C-

CS 22300 Computer Architecture and Assembly Language

Class:3 Lab:0 Credit:3
An introduction to the fundamental concepts of computer architecture progressing from the digital logic level to the microarchitecture level and then to the instruction set level. Assembly language and the assembly process will also be included.
Prereqs: CS 12400 with min grade of C-

CS 27500 Data Structures

Class:3 Lab:0 Credit:3
Data structures describe the way that computer programs organize and store information. This course introduces the specification, representation and manipulation of the basic data structures common to much of computer programming such as: linked lists, arrays, stacks, queues, strings, trees, graphs, search trees, heaps, hash tables, and B-trees.
Prereqs: CS 12400 with min grade of C-

CS 30100 Language Competency

Class:0 Lab:0 Credit:1
Attributes: Engr Tech Elective
A course intended to give the student experience in an additional high-level language. Each section of this course is the responsibility of a particular faculty member who will advise the student and assign programming projects. A student may receive credit for at most three of these sections, but for no section whose language was a major component of a course for which credit has already been attained. Various languages will be offered each semester.
Prereqs: CS 12000 with min grade of

CS 30200 Operating Systems

Class:3 Lab:0 Credit:3
An operating system manages all of the hardware and software resources of computer. This course provides an introduction to the basic concepts and terminology of operating systems. Topics will include multiprogramming, CPU scheduling, memory management, file systems, concurrent processes, multiprocessors, security, and network operating systems.

Prereqs: CS 27500 with min grade of C- AND CS 22300 with min grade of C-

CS 30303 Internship in Computer Science

Class:0 Lab:0 Credit:1-3
Attributes: Experiential Learning, ExL-Internship
Directed in-service experience with employers that may include but not limited to government agencies, private industry, and community organizations.

CS 30900 Discrete Math Structure

Class:3 Lab:0 Credit:3
This course is the study of finite and discrete mathematical structures relating to the theory of computation. Topics will include directed and undirected graphs and their relation to these structures, combinatorial problems inherent in computation, Boolean algebra, and recurrence relations.
Prereqs: MA 16400 with min grade of D

CS 31600 Programming Languages

Class:3 Lab:0 Credit:3
The study of programming language features and their implementation in different types of programming languages. The design goals and motivations for various languages will be discussed. Topics will include a comparison of block-structured, object-oriented, functional, and logic programming languages. The advantages and disadvantages of each type of language will be considered. Specific examples of each type of language will be included.
Prereqs: CS 27500 with min grade of D

CS 33200 Algorithms

Class:3 Lab:0 Credit:3
An algorithm is a procedure for solving a problem in a finite number of steps. , along with data structures, form the fundamental building blocks of computer programs. The types of algorithms discussed will include sorting, searching, probabilistic, graph, and geometric algorithms. The following algorithm techniques are covered: backtracking, divide and conquer, branch and bound, greedy method, and dynamic programming.
Prereqs: CS 27500 with min grade of D

CS 34200 Introduction To Computer-based Biomedical Image Analysis

Class:4 Lab:0 Credit:4
Attributes: Engr Tech Elective
Introduction to image, manipulation and analysis. Biomedical materials to be analyzed include electrophoretic gels, bacterial agar plates, cells and tissues, x-ray films and CAT scan images. Personal computer systems and the basic programming skill of the C language also will be introduced.
Prereqs: MA 15400 with min grade of C-

CS 40400 Distributed Systems

Class:3 Lab:0 Credit:3
A distributed system is two or more computers working together as a single unit. These systems are essential to the understanding of present and future computer applications. This course will include the following topics: concurrent processing, threads, network programming, distributed file systems, remote procedure calls, sockets, distributed objects, client-server models, and internet protocols.
Prereqs: CS 30200 with min grade of D

CS 41000 Automata and Computability

Class:3 Lab:0 Credit:3
A finite automaton is a mathematical model for a computation system. Computer science embodies many examples of finite state systems. This course will cover the basic principles of deterministic and non-deterministic finite automata, Turing machines, formal language theory, regular expressions, context-free grammers, the halting problem, and unsolvability.
Prereqs: CS 27500 with min grade of D AND CS 30900 with min grade of D

CS 41600 Software Engineering

Class:3 Lab:0 Credit:3

Software engineering is the study of the theory, methods, and tools which are needed to develop large, complex software systems. This course covers the specification, design, documentation, implementation and testing of software systems. Software life cycle, principles of project management, and case studies are also covered. A group project will be assigned.
Prereqs: CS 30200 with min grade of C-

CS 42000 Senior Design Project

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The objective of this course is to provide students with concrete experience in writing advanced computer programs for practical applications in science or industry. The student develops the necessary software using appropriate techniques and prepares documentation for the use and support of the completed system. Prerequsite: Senior level standing in Computer Science major

CS 44200 Database Systems

Class:3 Lab:0 Credit:3
A database is a system whose purpose is to organize, retrieve, and maintain large amounts of information. This course introduces the concepts and structure used in designing and implementing database systems. Topics include hierarchial, network, relational, and object-oriented data models, database design principles, normalization, data dictonaries, query languages and processing.
Prereqs: CS 27500 with min grade of C-

CS 45500 Computer Graphics

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Computer graphics provides a mechanism for creating and manipulating images by means of a computer. This course covers two-dimensional curve drawings, view transformations, geometric modeling. Projections, ray tracing, surface patch, three-dimensional object rendering, shading, and animation. Windows programming using OpenGL, and MFC will also be introduced.
Prereqs: CS 27500 with min grade of C- AND MA 26500 with min grade of C-

CS 46200 Introduction To Artificial Intelligence

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
This course will cover the following topics: problems and problem spaces, heuristic search, forward and backward reason, breadth-first vs. depth-first search, and/or graphs, conversion to clause form and resolution. A brief introduction to LISP programming will also be included.
Prereqs: CS 27500 with min grade of C-

CS 48000 The Practicum In Applied Mathematics

Class:3 Lab:0 Credit:3
The practicum course of a small team (a faculty advisor and 1-4 students) working on a real problem obtained in conjunction with a local business or industry. Not more than two terms of CS 48000 may be taken for credit.

CS 49000 Topics In Computer Sciences For Undergraduates.

Class:1-5 Lab:0 Credit:1-5
Attributes: Variable Title
Supervised reading and reports in various fields. Open to students only with the consent of the department.

CS 50100 Introduction to Computational Science

Class:3 Lab:0 Credit:3
Credit in this course may not be used toward a graduate degree in Computer Science. Computational concepts, tools, and skills for computational science and engineering scripting for file processing, high performance computing, and software development. Project may be required.

CS 51400 Numerical Analysis

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective
Iterative methods for solving nonlinear equations; linearA difference equations, applications to solution of polynomial equations; differentiation and integration formulas; numerical solution of ordinary differential equations; roundoff error bounds.
Prereqs: CS 41400 with min grade of C-

CS 51500 Numerical Linear Algebra

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Direct and iterative solvers of dense and sparse linear systems of equations, numerical schemes for handling symmetric algebraic Eigen value problems, and the singular-value decomposition and its applications in linear least square problems.
Prereqs: CS 31400 with min grade of C- OR MA 26500 with min grade of C- OR MA 35100 with min grade of C- AND MA 51100 with min grade of C-

CS 59000 Topics in Computer Sciences

Class:1-5 Lab:0 Credit:1-5
Attributes: Variable Title
Directed study for students who wish to undertake individual reading and study on approved topics.

EAS 11000 Survey of Geology

Class:2 Lab:2-3 Credit:3
Attributes: Lab Science, TransferIN
Not avalable for credit to students with credit in GEOS 11100 or EAS 11100. A survey of concepts, methods, and materials of physical and historical geology of professional and cultural interest to students who do not need the rigorous treatment of GEOS 11100 or 11200 or EAS 11100 or 11200. Laboratory will illustrate the methods and materials used in geologic studies.

EAS 16100 Survey of Astronomy

Class:2 Lab:3 Credit:3
Attributes: Lab Science
An introduction to the science of astronomical observation and interpretation including the historical development of calendars, and the structure of the solar system, the classification and the lifecycles of stars and other stellar objects, galaxies, and modern cosmological models. Laboratory exercises will be simple demonstrations of basic principles: the universe square law, composition of planets and their atmospheres, backyard "urban" observation, stellar spectra, and use of a computer-based planetarium.

EAS 19100 Introductory Topics in Earth and Atmospheric Science

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
This is a variable course. The title and content will vary.

EAS 22000 Survey of Physical Geography

Class:2 Lab:2-3 Credit:3
Attributes: Lab Science
A study of landforms, climates, soils and resources that comprise the world's natural environments.

EAS 22200 Weather Studies

Class:2 Lab:2 Credit:3
Online covers the composition and structure of the atmosphere, the flow of energy to, from and through the atmosphere, and the resulting motions. The basic physical principles of atmosphere conditions are stressed through the study of weather from meteorological data delivered via the Internet. Particular attention is given to severe weather topics and the effects of weather and climate on global societies.

EAS 22300 Ocean Studies

Class:2 Lab:2 Credit:3
Attributes: Lab Science

Online examines the ocean as it interacts with other components of the Earth. Basic physical and chemical properties of the ocean are stressed through oceanographic data delivered via the Internet. Topics include the flow and transformations of water and energy into and out of the ocean, ocean circulation, marine life and its adaptations, climate change, and the human/ societal impacts pertaining to the ocean.

ECE 15200 Programming For Engineers

Class:2 Lab:2 Credit:3

Introductory C programming course. Students will be introduced to basic syntax, standard mathematics library, control structures, user defined functions, arrays pointers, structures and file I/Os. Laboratory exercises will accelerate learning of fundamental materials through supervised practice.

Prereqs: ENGR 15100 with min grade of C-

ECE 20100 Linear Circuit Analysis I

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Volt-Ampere characteristics of circuit elements; independent and dependent sources; Kirchoff's Laws and circuit equations. Source transformations; Thevenin's and Norton's Theorems; Superposition. Transient response of RC, RL and RLC circuits. Sinusoidal steady-state and impedance. Instantaneous and average power. A minimum grade of C is required for the course prerequisites.

Prereqs: MA 16300 with min grade of C AND MA 16400 with min grade of C AND PHYS 15200 with min grade of C AND ECE 20700 with min grade of D-

ECE 20200 Linear Circuit Analysis II

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

A continuation of ECE 20100. The complex frequency plane; resonance; coupled circuits. Two-port network parameters. Polyphase analysis. Fourier series; Fourier Transform; Laplace Transform.

Prereqs: ECE 20100 with min grade of C- AND MA 26400 with min grade of C- AND ECE 20700 with min grade of D- AND ECE 21800 with min grade of D-

ECE 20700 Electronic Measurement Techniques

Class:0 Lab:3 Credit:1

Attributes: Credit By Exam

Introduction to basic instrumentation and measurement techniques; introduction to the experimental methods necessary for laboratory investigation. Introduction to laboratory report writing methods. The student is introduced to computer-aided circuit analysis methods.

ECE 21800 Linear Circuits Laboratory II

Class:0 Lab:3 Credit:1

Attributes: Credit By Exam

A continuation of ECE 207, with the introduction of advanced measurement methods and more sophisticated instrumentation.

Prereqs: ECE 20700 with min grade of D- AND ECE 20200 with min grade of D-

ECE 23300 Micro Computers in Engineering

Class:2 Lab:3 Credit:3

Attributes: Credit By Exam

An introduction to microcomputers and microcontrollers with emphasis on single board embedded systems; gates, memory, microcomputer hardware, data representation, programming, input/output, interfacing, analog to digital conversion, digital to analog conversion, transducers, sensors, actuators, and the design and development of turnkey systems.

Prereqs: ENGR 15100 with min grade of D-

ECE 25100 Object Oriented Programming

Class:2 Lab:3 Credit:3

The C++ and Java programming languages are presented. Students will be introduced to classes, inheritance,

polymorphism, class derivation, abstract classes, interfaces, function overloading, container classes and template classes.
Prereqs: ENGR 15200 with min grade of C- OR ECE 15200 with min grade of C-

ECE 27500 Electronics Devices

Class:3 Lab:3 Credit:4
Attributes: Engr Tech Elective
Electronic amplifiers; operational amplifier circuits; diode characteristics and circuit applications; bipolar junction transistor (BJT) and MOSFET characteristics, operating modes biasing, linear amplifier configurations; ideal characteristics of logic devices; basic logic devices using BJTs and MOSFETs.
Prereqs: ECE 20200 with min grade of C- AND ECE 21800 with min grade of C-

ECE 29100 Industrial Practice I

Class:0 Lab:0 Credit:0
Practice in industry and comprehensive written report of this practice. This course is for Cooperative Education Students Only.

ECE 29200 Industrial Practice II

Class:0 Lab:0 Credit:0
Practice in industry and comprehensive written report of this practice. This course is for Cooperative Education students only.

ECE 30100 Signals And Systems

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Continuous and discrete signal and system analysis and representation. Fourier Series and transforms, Bobe plots, sampling and discrete Fourier transforms, Laplace Transforms Transient response characteristics, Discrete-time systems difference equations, Z-Transforms, S-plane to Z-plane mappings and stability relationships. Continuous and discrete systems: convolution, state space representation, and solution of state equations.
Prereqs: ECE 20200 with min grade of C- AND MA 26400 with min grade of C-

ECE 30200 Probabilistic Methods In Electrical Engineering

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
An introductory treatment of probability theory including distribution and density functions, moments and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and responses of linear systems to random inputs.
Prereqs: MA 26500 with min grade of D- AND ECE 20200 with min grade of D- OR ME 32500 with min grade of D- AND ECE 30100 with min grade of D-

ECE 30500

Class:3 Lab:0 Credit:3

ECE 31100 Electric And Magnetic Fields

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Continued study of vector calculus, electrostatics, and magnetostatics. Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.
Prereqs: MA 26400 with min grade of C- AND PHYS 26100 with min grade of C-

ECE 31200 Engineering Project Management

Class:3 Lab:0 Credit:3
Introduction to principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycles costings, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control.

ECE 33000 Microcomputer Programming And Interfacing

Class:2 Lab:3 Credit:3
Attributes: Engr Tech Elective
Assembly language, C++ programming, and interfacing techniques; control of digital hardware and peripheral devices by software; software structures and tools used in accomplishing low level hardware control.
Prereqs: EE 37000 with min grade of D- OR ECE 37000 with min grade of D-

ECE 33500 Electronics-Systems

Class:2 Lab:3 Credit:3
Attributes: Engr Tech Elective
Topics in multistage amplifiers, feedback amplifiers, oscillators, operational amplifiers, analog systems, power amplifiers and systems, communication systems.
Prereqs: ECE 27500 with min grade of D-

ECE 35400 Software Engineering Design I

Class:3 Lab:0 Credit:3
The design and implementation of larger scale software in Java. Introduction of software engineering design concepts. Application of fundamental concepts and programming strategies useful in the context of any programming language.
Prereqs: ECE 25100 with min grade of D-

ECE 37000 Digital Systems-Logic Design

Class:2 Lab:3 Credit:3
Attributes: Engr Tech Elective
Introduction to the logical design and analysis of digital systems; Boolean algebra; combinational logic; minimization techniques; Karnaugh mapping. Introduction to sequential systems analysis and design.
Prereqs: ENGR 15200 with min grade of D- OR ECE 15200 with min grade of D-

ECE 37100 Computer Organization & Design

Class:2 Lab:3 Credit:3
Attributes: Engr Tech Elective
Design of computer systems with emphasis on computer hardware. Topics discussed include: Introduction to Basic Design Concepts, Computer Abstraction and Technology, Role of Performance, Instruction Language, Arithmetic for Computers, Processor Data Path and Control, Enhancing Performances with Pipelining, and Exploiting Memory Hierarchy. Students design and implement a RISC processor in the laboratory.
Prereqs: ECE 37000 with min grade of D-

ECE 37500 Digital Integrated Circuits

Class:2 Lab:3 Credit:3
Attributes: Engr Tech Elective
Analysis and design of digital electronic circuits. Bipolar and MOS device modeling. MOS integrated circuit design and timing considerations. Bipolar, BiCMOS and GaAs digital circuits. Monostable, and astable multivibrators. Introduction to A/D and D/A converters.
Prereqs: ECE 27500 with min grade of D-

ECE 38000 Computers in Engineering Analysis

Class:2 Lab:3 Credit:3
Theory and application of computers in simulation, data acquisition control, instrumentation, and in the solution of engineering problems. Development of mathematical models suitable for computer solutions, and numerical techniques. Traditional and modern software such as FORTRAN, C, LabVIEW, MATLAB, Lotus 1-2-3 and Excel will be used.
Prereqs: ENGR 15100 with min grade of C- AND MA 26400 with min grade of C- AND ME 27500 with min grade of D- AND ECE 20100 with min grade of C- AND ECE 20200 with min grade of D-

ECE 38400 Linear Control Systems

Class:3 Lab:3 Credit:4
Introduction to classical control theory. Transfer functions, block diagram manipulation, and signal flow graphs. Transient and steady state responses; characteristics, and design. Sensitivity analysis and disturbance rejection.

System stability. Roor locus analysis and design. Frequency response analysis using Bode and polar plots. Nyquist criterion and Nichols chart. Controller design using Blode plots. State-space description. Design of state-feedback controllers and controllers and observers.
Prereqs: ECE 30100 with min grade of D-

ECE 39300 Industrial Practice III

Class:0 Lab:0 Credit:0
Practice in industry and comprehensive written report of this practice. For Cooperative Education students only.

ECE 39400 Industrial Practice IV

Class:0 Lab:0 Credit:0
For co-operative engineering students only. Must be accepted for the Co-op program by the co-operative engineering representative. Practice in industry and comprehensive written report of this practice.

ECE 39500 Industrial Practice V

Class:0 Lab:0 Credit:0
For co-operative engineering students only. Must be accepted for the Co-op program by the co-operative engineering representative. Practice in industry and comprehensive written report of this practice.

ECE 42301 Power Electronics

Class:2 Lab:3 Credit:3
An introduction to the design and analysis of switch mode power converters. Topics include: switching characteristics of MOSFET's and IGBT's, properties of DC-DC switch mode power converters and regulations of the output voltage, rectification of utility inputs and power factor correction, review of magnetic circuits, design of high frequency inductors and transformers, design of switch mode DC power supplies, soft switching, synthesis of DC and low frequency AC voltages with application to motor drives and uninterruptible power supplies, and thyristor converters. Use of circuirt simulations and hardware.

ECE 42600 Electric Drives

Class:2 Lab:3 Credit:3
Introduction to electric drives and power electronics. Magnetic circuits and transformers. Principles of dc, synchronous, induction, and stepper motors; equivalent circuits and operating characteristics. Applications to drive systems. Laboratory experiments to illustrate principles.
Prereqs: ECE 27500 with min grade of D- AND ECE 31100 with min grade of D-

ECE 42900 Senior Engineering Design I

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Prerequisite: Penultimate semester. The senior engineering design courses I and II constitute a two semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presenation of a substantial written report and a formal oral presenation before faculty and students.
Prereqs: (COM 30700 with min grade of D- AND ECE 27500 with min grade of D- AND ECE 31200 with min grade of D- AND ECE 37000 with min grade of D-) AND ECE 38400 with min grade of D- OR CS 27500 with min grade of D- AND ECE 30100 with min grade of D- AND ECE 37100 with min grade of D-

ECE 43200 Elements Of Power System Engineering

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Fundamental concepts of power systems analysis, transmission line parameters, basic system models, steady-state performance, network calculations, power flow solutions, fault studies, symmetrical components, operating strategies and control.
Prereqs: ECE 42600 with min grade of D-

ECE 43900 Senior Engineering Design II

Class:2 Lab:3 Credit:3

Attributes: Experiential Learning, ExL-Design Projects
The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and formal oral presentation before faculty and students.
Prereqs: ECE 42900 with min grade of D-

ECE 44800 Introduction To Communication Theory

Class:3 Lab:3 Credit:4
Attributes: Engr Tech Elective
Signal analysis, introduction to digital communication and pulse code modulation. Introduction to amplitude modulation and frequency modulation. Introduction to information theory.
Prereqs: ECE 30200 with min grade of D- AND ECE 30100 with min grade of D- AND ECE 27500 with min grade of D-

ECE 45100 Industrial Automation

Class:2 Lab:3 Credit:3
Pre-requisite: ECE 37000 Operating principles, design, and application of programmable logic controllers. Data acquisition and data analysis using PCs: A to D and D to A converters, sensors and actuators, process variable measurement, signal conditioning: data acquisition and control software applications.
Prereqs: ECE 37000 with min grade of D-

ECE 45400 Software Engineering Design II

Class:3 Lab:0 Credit:3
Design methods utilized in the development of complex software systems, and their application in concurrent, real-time, and distributed object-oriented software environments.
Prereqs: ECE 35400 with min grade of D-

ECE 45900 ADVANCED DIGITAL SYSTEM DESIGN.

Class:2 Lab:3 Credit:3
Prerequisite: ECE 3700. Design, simulation, and testing of digital systems using a hardware description language and programmable logic devices. Complex programmable logic devices (CPLDs) and field programmable gate arrays (FPGAs) will be studied and utilized. Laboratory will include design, simulation and implementation, and testing of designs on available FPGA/CPLD boards.
Prereqs: ECE 37000 with min grade of D-

ECE 46400 Computer Architecture and Organization

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Design of computer systems with emphasis on computer architecture. Topics discussed include: Fundamentals of Computer Design, Instruction set principles and Examples, Pipelining, Advanced Pipelining and Instruction-Level Parallelism, Memory-Hierarchy Design, I/O Systems, Buses and Arbitration Techniques, Interconnection Networks, and Multiprocessors.
Prereqs: ECE 37100 with min grade of D-

ECE 46800 Introduction to Compilers and Translation Engineering

Class:3 Lab:3 Credit:4
Attributes: Engr Tech Elective
The design and construction of compilers and other translators. Topics include compilation goals, organization of a translator, grammar and languages, symbol tables lexical analysis, syntax analysis (parsing), error handling, intermediate and final code generation, assemblers, interpreters, and an introduction to optimization. Emphasis is on engineering a compiler or interpreter for a small programming language - typically a C or Pascal subset. Projects involve the stepwise implementation (and documentation) of such a system.
Prereqs: ECE 37100 with min grade of D-

ECE 46810 Operating Systems

Class:3 Lab:0 Credit:3

The design of systems programs, in particular, operating systems, assemblers, loaders and compilers. The role of system programs as the link between computer hardware and software is emphasized. Topics include: multiprogramming, CPU scheduling, memory management, file systems, concurrent processes, multiprocessors, security, and network operating systems.

Prereqs: ECE 37100 with min grade of D

ECE 47600 Digital Signal Processing

Class:2 Lab:3 Credit:3

Theory and implementation of real time digital signal processing. Survey or continuous filter design using Butterworth, Chebychev, inverse Chebychev, elliptic, and Bessel approximations; type transformations; review of sampling theory, discrete time signals and systems, and Z-transforms; design of IIR filters using impulse invariance, bilinear transform, and a survey of direct techniques; design of FIR filters using Fourier series and windows, least squares error, and optimal equiripple techniques; properties and applications of discrete and fast Fourier transforms. Overview of spectulative estimation techniques. Laboratory includes implementation of lecture topics.

Prereqs: ECE 30100 with min grade of D- AND ECE 23300 with min grade of D-

ECE 48300 Digital Control Systems

Class:3 Lab:0 Credit:3

The course introduces feedback computer controlled systems, the components of digital control systems, and system models of the z-domain (state variable representations.) The objectives for system design and evaluation of system performance are considered. Various discrete-time controllers are designed including PID-controllers, state and output feedback controllers, and reconstruction of states using observers. The systems with the designated controllers are tested by simulations.

Prereqs: ECE 38200 with min grade of D- OR ME 48500 with min grade of D-

ECE 49500 Selected Topics In Electrical Engineering

Class:0-4 Lab:0-3 Credit:1-4

Attributes: Engr Tech Elective, Variable Title

ECE 49600 Electrical Engineering Projects

Class:0-18 Lab:0 Credit:0-18

Attributes: Variable Title

Hours and credits to be arranged.

ECE 50100 Introduction to Digital Processing of Speech Signals

Class:3 Lab:0 Credit:3

A course on digital processing of speech signals expands and enhances the capabilities of electrical and computer engineering graduates. It is particularly useful for those specializing in areas including communication, signal processing and multimedia processing. The introductory topics in speech processing with computer projects are suitable for graduate students planning to advance their education and career in fields such as audio engineering, human-machine interfacing, speech and speaker recognition applications and multimedia applications. This course is aimed primarily to ECE graduate students specializing in communication and signal processing area.

Prereqs: ECE 30100 with min grade of C-

ECE 50201 Information Theory

Class:3 Lab:0 Credit:3

This course is a graduate level introduction to information theory. Information theory is probably the most elegant mathematical theories, with the most direct and significant engineering impacts to our life in the information age. Information theory has found its applications in many areas, including statistics, computer sciences, biology, economics, etc. The focus of this course will be on the direct application of information theory in digitial communications. We believe that the most important part of learning information theory is to learn a new way of thinking about engineering problems. In this sense, this course is beneficial not only to communication major students, but also to students in other engineering disciplines.

ECE 50300 Numerical Methods in Engineering

Class:3 Lab:0 Credit:3
Numerical methods, solutions of equations of one variable, interpolation and polynomial approximation, numerical integration and differentiation, numerical solution of initial-value problems, solution of linear systems, iterative methods for solving linear systems, approximation theory, approximating eigenvalues, solutions of systems of nonlinear equations, boundary-value problems of ordinary differential equations, numerical methods for partial-differential equations.
Prereqs: MA 26400 with min grade of D-

ECE 50500 Network Programming

Class:3 Lab:0 Credit:3
This course will cover practical aspects of computer network programming, with emphasis on the Client/ Server, P2P and distributed applications. The goal of this course is to introduce students to the basics of computer networks and internet programming. We will introduce the students to the TPC/IP protocal stack and some of its important protocals. Students will also be introduced to multi-tier application development and RPC technologies including: RMI, CORBA, EJB and Web Services. We will also look at industry trends and discuss some innovative ideas that have recently been developed. Some of the course material will be drawn from the web, industry white papers and internet RFCs.
Prereqs: ENGR 15200 with min grade of C-

ECE 50600 Biomedical Instrumentation Design

Class:3 Lab:0 Credit:3
This course covers engineering aspects of detection, acquisition and processing of signals from the human body. Microcontrollers are used for common biomedical instrumentation design and implementation. The analog and digital electronics, analog to digital and digital to analog conversion, and interfacing with computers via microcontrollers are emphasized. The course is aimed primarily at graduate students specializing in inter- disciplinary engineering. Recommended prerequisites: Circuits and Electronics; Analog and Digital Signal Processing and Programming in C.

ECE 50700 Introduction To Biomedical Imaging

Class:3 Lab:0 Credit:3
This course covers the major aspects of modern medical imaging systems including x-ray imaging, computed tomography, magnetic resonance imaging, ultrasound imaging, single-photon emission tomography and positron emission tomography. The main emphasis is to explain and exam the fundamental physics and engineering underlying each imaging modality, and the image acquistion, reconstruction and artifact correction. Students will gain technical knowledge and an overview of current status of medical imaging technologies. The course is aimed primarily to graduate students specializing in interdisciplary engineering. Prerequisite: college level physics, signals and systems, and programming experience in MatLab or C.

ECE 50900 Advanced Electric Drives

Class:3 Lab:0 Credit:3
This course covers topics related to advanced methods for DC and AC electric drives control systems. The emphasis is on AC drives vector control techniques that are used when high performances are required to control torque, acceleration, speed and position; hybrid and electric vehicles, wind- electric energy generation, industrial robots, biomedical application, etc. Simulink-METLAB based computer models are used to study the vector control of induction and synchronous AC machine, and real-time simulations are performed using dSPACE prototyping tool. This course is aimed primarily at ECE graduate students specializing in electric drives, power electronics and power systems area.
Prereqs: ECE 42600 with min grade of C-

ECE 51200 Power Systems

Class:3 Lab:0 Credit:3
This course covers topics which are becoming increasingly important in present and future power systems such as: electric energy sources including renewable and the environment, AC transmission lines and underground cables, power quality, synchronous generators and reactive power, voltage regulation and stability, transient and dynamic stability, control of power systems, economic dispatch, transmission line faults and transient over-voltages. Simulink/MATLAB and/or Pspice based computer simulations, use of Power-World simulator and PSCAD/EMTDC software that is widely accepted in industry.
Prereqs: ECE 20200 with min grade of C-

ECE 51400 Advanced Engineering Economics

Class:3 Lab:0 Credit:3

Effective project managers have complete command of their project costs and a thorough understanding of the financial aspects of their business. This course reviews the fundamentals of accounting; examines project cost accounting principles, applications, and impact on profitability; examines the principles of project costing, covers the elements involved in cash management; introduces the framework for how projects are financed and the potential impact financing has on the projects; and a framework for using an effective project cost system. The course is aimed primarily to engineering graduate students interested in project management. Prerequisite: ME 31100 or 31200 plus basic statistics.

Prereqs: ME 31100 with min grade of D- OR ECE 31200 with min grade of D-

ECE 51801 Quality Control

Class:3 Lab:0 Credit:3

This course examines the design in order to acquire a better product/process quality. Other aspects of design included are robust design, parameter design, or Taguchi Techniques. This course also gives students a current understanding of the techniques and application of design of experiments in quality engineering design. The students will learn design of quality control systems in manufacturing, use of advanced statistical process controls, sampling inspection techniques, process capability, and other statistical tools. Also included are vendor sourcing and control tools, methods for establishing specifications and tolerances, quality function deployment and other quality control techniques. In additon, Six Sigma will be included. This course is aimed primarily to engineering graduate students interested in project management. Basic Statistics is a prerequisite.

ECE 51900 Control Theory II

Class:3 Lab:0 Credit:3

The approximation of common non-linearities by describing functions and the analysis of resultant system behavior. Review of matrix analysis. Statespace formulation, representation, solution and design. Introduction to optimization and computational methods.

Prereqs: ECE 38200 with min grade of B- OR ME 48500 with min grade of B-

ECE 52501 Statistical Concepts in Engineering

Class:3 Lab:0 Credit:3

This course is directed toward the graduate student who has never had a statistics course or whose last statistics course was taken some time ago and a refresher course is required. The primary purpose of this course is to provide a basic understanding of fundamental probability and statistical principles, their underlying assumptions, and their use in data analysis using real-world engineering problems. This course is aimed primarily at engineering graduate students interested in project managment.

ECE 52701 System Engineering

Class:3 Lab:0 Credit:3

In today's environment, there is an ever-increasing need to develop and produce systems that are robust, reliable, high quality, supportable, cost-effective, and responsive to the customer or user. Reflecting these worldwide trends, course introduces students to the full range of system engineering concepts, tools and techniques, emphasizing the application of principles and concepts of system engineering and the way these principles aid in the development, utilization and support of systems. This course covers systems engineering and both a technical and a management perspective. The course is aimed primarily to engineering graduate students interested in project management.

ECE 52900 Introduction to Microwave Engineering

Class:3 Lab:0 Credit:3

This course is an introduction to the basic aspects of microwave techniques. The topics will include Maxwell's equations with their physical meaning and most relevant forms; microwave generation, propagation, boundry conditions, and S parameters. Other topics include transmission lines, Smith Charts, microwave networks, couplers, detectors, mixes and amplifiers. This course also includes the use of hands-on commercial CAD software.

Prereqs: ECE 31100 with min grade of C-

ECE 53000 Wireless Communication Systems

Class:3 Lab:0 Credit:3
This course is an introduction to the basic aspects of wireless communications. The topics will include cellular concept, channel assignment, handoff, trunking efficiency, frequency reuse, capacity planning, mobile radio propation, multipath fading, modulation, multiple access techniques, and wireless networking.
Prereqs: ECE 30200 with min grade of C AND ECE 31100 with min grade of C

ECE 53100 Fiber Optic Communications

Class:3 Lab:0 Credit:3
This course deals with the fundamental principles for understanding and applying optical fiber technology in the transmission of information. Study topics include the introduction to optical transmission in fibers, fiber structure and modes, signal degradation, light sources, photodetectors, optical receivers, digital transmission systems, and point to point link analysis. Also included is the use of a simulation tool, Ansoft Designer, that can examine the performance of key components such as laser diodes, optical couplers and photo detectors.
Prereqs: ECE 31100 with min grade of C

ECE 53200 Computational Methods For Power System Analysis

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
System modeling and matrix analysis of three-phase power networks. Applications of numerical methods and computers to the solution of a variety of problems related to the planning, design and operation of electric power systems.
Prereqs: ECE 43200 with min grade of B-

ECE 54400 Digital Communications

Class:3 Lab:0 Credit:3
Introduction to digital communication systems and spread spectrum communications. Topics include analog message digitization, signal space representation of digital signals, binary and M-ary signaling methods, detection of binary and M-ary signals, comparison of digital communication systems in terms of signal energy and signal bandwidth requirements. The principal types of spread spectrum systems are analyzed and compared. Application of spread spectrum to multiple access systems and to secure communication systems is discussed.
Prereqs: ECE 44800 with min grade of B-

ECE 54700 Introduction To Computer Communication Networks

Class:3 Lab:0 Credit:3
A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication networks as they evolve toward the integrated networks of the future, employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks reliability and error recovery, and integrated networks.
Prereqs: ECE 30200 with min grade of D-

ECE 55200

Class:3 Lab:0 Credit:3

ECE 55400 Electronic Instrumentation And Control Circuits

Class:3 Lab:0 Credit:3
Analysis and design of special amplifiers, pulse circuits, operational circuits, d-c amplifiers, and transducers used in instrumentation, control, and computation.
Prereqs: ECE 33500 with min grade of B- AND ECE 30100 with min grade of B-

ECE 56000

Class:3 Lab:0 Credit:3

ECE 56700

Class:3 Lab:0 Credit:3

ECE 56900

Class:3 Lab:0 Credit:3

ECE 57000

Class:3 Lab:0 Credit:3

ECE 57400 Software Engineering Methodology

Class:3 Lab:0 Credit:3

Introduces students to current software process and life cycle models; software management methods for controlling and managing software projects. Topics include: life cycles models, requirements gathering, software planning, software quality, risk management, software inspections, software metrics, software testing and software management concepts. Team project work is part of the course requirements. Students are expected to use their programming skills and knowledge of data structures to design and test software generated during their team project activities. A good working knowledge of C programming, UNIX tools and data structures.

Prereqs: ECE 59500 with min grade of D-

ECE 58900 State Estimation & Parameter Id Of Stochastic Systems

Class:3 Lab:0 Credit:3

Introduction to point estimation, least squares, Bayes risk and maximum likelihood. Optimum mean-square recursive estimation for non-dynamic stochastic systems. State estimation for discrete-time and continuous-time dynamic systems. Parameter identification of stochastic approximation, least squares, and random search algorithms.

ECE 59500 Selected Topics In Electrical Engineering

Class:0-3 Lab:0-3 Credit:1-3

Attributes: Variable Title

Formal classroom or individualized instruction on topics of current interest.

ECE 60400 Electromagnetic Field Theory

Class:3 Lab:0 Credit:3

Review of general concepts (Maxwell's equations, materials interaction, boundary conditions, energy flow); statics (LaPlace's equation, Poisson's equation); distributed parameter systems (classification of solutions, transmission lines, and waveguides); radiation and antennas (arrays, reciprocity, Huygen's principle); a selected special topic (e.g. magnetostatics, waves in anisotropic media and optical fibers).

Prereqs: ECE 31100 with min grade of B-

ECE 61000

Class:3 Lab:0 Credit:3

ECE 63300

Class:3 Lab:0 Credit:3

ECE 63800

Class:3 Lab:0 Credit:3

ECE 64900

Class:3 Lab:0 Credit:3

ECE 65900

Class:3 Lab:0 Credit:3

ECE 66100

Class:3 Lab:0 Credit:3

ECE 66600

Class:3 Lab:0 Credit:3

ECE 69500

Class:1-3 Lab:0-5 Credit:1-3

Attributes: Variable Title

ECE 69800

Class:1-18 Lab:0 Credit:1-18

ECET 01500

Class:2 Lab:4 Credit:0

ECET 02300

Class:2 Lab:4 Credit:0

ECET 03900

Class:2 Lab:4 Credit:0

ECET 04100

Class:2 Lab:4 Credit:0

ECET 05100

Class:2 Lab:4 Credit:0

ECET 10000 Introduction to Electrical & Computer Engineering Technology

Class:0 Lab:3 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
An introduction to the different fields of Electrical and Computer Engineering Technology. Hands-on laboratory techniques along with the exposure to lab procedures and safety will be introduced. Students would be engaged in Internet and Library research and learn about University wide resources and how to utilize them.

ECET 10200 Electrical Circuits I

Class:3-3 Lab:2-3 Credit:4
Attributes: Credit By Exam
(MA 14700 is a pre- or co-requisite for ECET 10200.) A study of DC electrical circuits, Ohm's Law, Kirchoff's Laws, series and parallel circuits, power, magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance, and an introduction to alternating voltages, currents and reactance.
Prereqs: MA 14700 with min grade of D-

ECET 10400

Class:2-2 Lab:2-3 Credit:3

ECET 10500

Class:2 Lab:3 Credit:3

ECET 10900 Digital Fundamentals

Class:2 Lab:3 Credit:3
A study of binary codes, Boolean algebra, logic gates and flip-flops, small scale (SSI), medium scale (MSI)integrated circuits, Combinational logic design techniques and sequential logic components.

ECET 11000 Computer System Architecture

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam, Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
Introduction to PC-based system architecture. Identification, installation and upgrading of microcomputer modules, Windows Operating System. Ability to configure IRQ's, I/O addresses and set switches and jumpers. Distinguish between the popular CPUs. Identify the categories of Memory. Identify the popular types of motherboards, their components and their architecture. Differentiate between the different buses and their interfaces. Basic concepts and terminology of Networking. Diagnosing and troubleshooting common module problems and system malfunctions.

ECET 12000

Class:3 Lab:0 Credit:3

ECET 12600

Class:2 Lab:3 Credit:3

ECET 15200 Electrical Circuits II

Class:3-3 Lab:2-3 Credit:4

Attributes: Credit By Exam
(MA 14800 is a prerequisite or co-requisite for ECET 15200) AC circuits, including j-operator, phasors, reactance, impedance, and power are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied in the study of passive filters, resonant circuits, single-phase and three-phase circuits, and elementary magnetic circuits.
Prereqs: ECET 10200 with min grade of D- AND MA 14800 with min grade of D-

ECET 15400 Analog Electronics I

Class:3 Lab:3 Credit:4
Attributes: Credit By Exam
A study of electronic devices such as the diodes, FET, BJT, Thyristors, MOSFET and operational amplifIers. Analysis and design of electronic circuits such as the comparator amplifier, filter, oscillator and voltage regulator. Other topics include the heat sinks and thermal design.

ECET 15500

Class:2 Lab:3 Credit:3

ECET 15900 Digital Applications

Class:3 Lab:3 Credit:4
This course continues the study of combinational and sequential digital applications using programmable logic devices and standard logic devices. The input and output characteristics of the various common logic families, the appropriate signal conditioning techniques for on/off power interfacing, digital and analog signal interfacing techniques and memory devices and systems are discussed.
Prereqs: ECET 10900 with min grade of D-

ECET 18000

Class:3 Lab:3 Credit:4

ECET 20100 Introduction to the computer based on methods of

Class:2 Lab:3 Credit:0-3
mathematical modeling and simulation of electrical and electronic circuits and systems, instrumentation and measurement procedures. Students will learn to use the up-to-date software tools. Topics will also include probability and statistical methods.
Prereqs: MA 14800 with min grade of

ECET 20900 Introduction to Microcontrollers

Class:3 Lab:3 Credit:4
Attributes: Credit By Exam
An introduction to microprocessor hardware and software focusing on embedded control applications. Interconnection of components, peripheral devices, bus timing relationships, structured C language programming, debugging, input/output techniques, and use of PC-based software development tools are studied.
Prereqs: ECET 15900 with min grade of D- AND ECET 21000 with min grade of D-

ECET 21000 Structured C++ Programming For Electromechanical Systems

Class:2 Lab:2-3 Credit:3
Attributes: Credit By Exam
Use of C++ in structured programming and Top Down Design techniques. Problem solving in technology applications is emphasized. The laboratory exercise will emphasize the interfacing of electromechanical systems with software and generation of embedded coding.

ECET 21200 Electrical Power And Machinery

Class:3-3 Lab:2-3 Credit:4
Attributes: Credit By Exam
A study of power transformers, single and polyphase circuits. The study of DC machines, AC single and polyphase synchronous and induction machines, and an introduction to power electronics.
Prereqs: ECET 15200 with min grade of D-

ECET 21400 Electricity Fundamentals

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
This course provides an introduction to the basics of electricity and electronics. The areas of study include both theory and application of DC and AC electric motors, as well as linear and digital devices.

ECET 21500

Class:3 Lab:2-3 Credit:4

ECET 21700 Introduction to Process Control

Class:2 Lab:3 Credit:3
This course introduces fundamental concepts of process control systems open loop and closed loop controls. Input output characteristics of process elements dead time and span. Switching analysis of process hardware. Modeling of static and dynamic processes. Diode transistor and SCR switching characteristics. Measurements of electronic signals. Solid state switching devices. Loading effects and power interfaces. Noise and signal conditioning and grounding. Studying cables and their charactertistics. Various industrial instruments and interface buses, standards and practices.
Prereqs: ECET 15400 with min grade of D- OR ECET 21400 with min grade of D-

ECET 26200 Programmable Logic Controllers

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
Introduction to programmable logic controllers (PLCs) to perform process control and motor control functions. Topics include PLC architecture, working principles, programming techniques, ladder logic programming, data manipulation, data highway, various input/output modules and their interface for actuation signal control.
Prereqs: ECET 15200 with min grade of D- OR ECET 21400 with min grade of D-

ECET 26500 Computer Networks

Class:2 Lab:3 Credit:3
This course is an introduction to Data communications and Networking hardware. The emphasis is on network hardware and topologies, physical interface standards, construction of transmission media, Local and Wide Area Network protocols as they relate to network hardware, hands-on Local Area Networks installation and troubleshooting.

ECET 27000

Class:3 Lab:3 Credit:4

ECET 27600

Class:1 Lab:3 Credit:2
Prereqs: ECET 30300 with min grade of D

ECET 28000

Class:3 Lab:3 Credit:4

ECET 28100

Class:3 Lab:3 Credit:4

ECET 28600

Class:0 Lab:6 Credit:2

ECET 29100 Industrial Practice I

Class:0 Lab:0 Credit:0
Practice in industry with written reports of this practice by the co-op student.

ECET 29200 Industrial Practice II

Class:0 Lab:0 Credit:0
Practice in industry with written reports of this practice by the co-op student.

ECET 29600 Electronic System Fabrication

Class:1 Lab:3 Credit:2
The course includes electronics schematic, printed circuit board design and fabrication using Electronic Design

Automation (EDA) tools. Designing electronic circuit schematic, schematic annotation netlist file generations, electronic packaging selection printed circuit board (PCB) artwork design using autorouter and manual router software tools. Populate the printed circuit board with electronic components; solder using hand tools and testing/debug the electronics hardware to an operational system using bench-top instruments. Course teaches prototyping electronic projects.
Prereqs: ECET 15900 with min grade of D- AND ECET 15400 with min grade of D-

ECET 29900 Electrical Engineering Technology

Class:1-6 Lab:0-6 Credit:1-6
Attributes: Variable Title
Hours and subject matter to be arranged by staff. Course may be repeated for credit up to six hours.

ECET 30200

Class:3-3 Lab:2-3 Credit:4

ECET 30300 Communications I

Class:3-3 Lab:2-3 Credit:4
Attributes: Credit By Exam
Signal representation in time and frequency domains, concepts of noise, impedance matching, mixing, heterodying, filters, tuned amplifiers, oscillators and voltage controlled oscillators, phased-lock-loop, analog and digital modulation in amplitude, frequency and phase and multiple user communication systems. Other topics include transmission lines, electromagnetic wave propagation in space, and antenna systems.
Prereqs: ECET 15400 with min grade of D-

ECET 31000 Biomedical Instrumentation I

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
An introduction to physiological variants, the concept of measurements and problems encountered in measurements from a living human body. Detail study of transducer principles and circuit techniques in measurement in circulatory, digestive, muscular and nervous systems. System approach to intensive care monitoring and data acquisition. Evaluation of biomedical instruments to meet performance specifications and electrical safety.
Prereqs: ECET 15400 with min grade of D-

ECET 31200 Power Electronics

Class:3 Lab:3 Credit:4
Attributes: Credit By Exam
Prerequistes - ECET 15400 for ECET majors ECET 21200 and ECET 21700 for Mechatronics majors. Introduction to the characteristics of power semi-conductor devices, diode rectifiers, thyristors, commutation techniques, controlled rectifiers, ac voltage controllers, choppers, inverters, and motor drives.
Prereqs: (ECET 15400 with min grade of D- OR ECET 21700 with min grade of D-) AND ECET 21200 with min grade of D-

ECET 31500 Digital Design And Implementation Using Programmable Logic

Class:3 Lab:3 Credit:4
Devices (PLDs) Review of digital logic (sequential and combinational)design and implementation using conventional techniques. Digital system design and implementation as currently practiced in industry will be covered using state-of-the-art computer software. High level notations using PLD technology will be introduced for the synthesis of digital hardware.
Prereqs: ECET 15900 with min grade of D- AND ECET 29600 with min grade of D-

ECET 31600

Class:3 Lab:2 Credit:4

ECET 31700

Class:3-3 Lab:2-3 Credit:4

ECET 33000 Industrial Programming & Networking

Class:2 Lab:2 Credit:3

Networking industrial devices including services, computers, smart sensors, controllers, and input/output devices. Programming applications for transferring data between industrial applications.
Prereqs: ECET 26200 with min grade of D-

ECET 33100 Generation And Transmission Of Electrical Power

Class:3 Lab:2-3 Credit:4
A study of the generations and transmission of electrical energy. Includes techniques used by electric utilities for the protection of generating equipment and transmission line, an introduction to the economic considerations of power plant operation, and three-winding transformers and methods of solving unbalanced three-phase systems.
Prereqs: ECET 21200 with min grade of D-

ECET 34000

Class:3 Lab:3 Credit:4

ECET 35200

Class:3 Lab:2 Credit:4

ECET 36200 Process Control Instrumentation

Class:2 Lab:2 Credit:3
Attributes: Credit By Exam
Introduction to process control principles and practices. Study of analog and digital signal conditioning; thermal, mechanical and optical transducers; electromechanical, pneumatic and hydraulic control devices; and the application of computer-aided tools for process control instrumentation.
Prereqs: ECET 21400 with min grade of D- OR ECET 21700 with min grade of D-

ECET 36400

Class:3 Lab:0 Credit:3

ECET 36500

Class:3-3 Lab:2-3 Credit:4

ECET 36700 Internetworking and TCP/IP

Class:2 Lab:3 Credit:3
This course is a continuation of ECET 26500. The emphasis is on integrating the TCP/IP protocol suite on networking and internetworking devices such as repeaters, bridges, routers, gateways, and switches. Other topics from emerging networking technologies will be considered, as applied to high speed networks.
Prereqs: ECET 26500 with min grade of D-

ECET 37000

Class:3 Lab:3 Credit:4

ECET 38000

Class:3 Lab:0 Credit:3

ECET 38400 Advanced Mathematical Methods In EET

Class:3 Lab:3 Credit:4
An advanced course in mathematical analysis applied to networks that stresses network theorems and solutions in time and frequency domains. Emphasis is placed on the use of software tools.
Prereqs: ECET 15200 with min grade of D- AND MA 21900 with min grade of D-

ECET 39200 Digital Signal Processing

Class:2 Lab:3 Credit:3
Introduction to the fundamentals of : discrete-time principles, sampling theorem, discrete Fourier transform, fast Fourier transforms, time and frequency domain considerations, Z-transform, solution of difference equations and design of digital filters.
Prereqs: ECET 38400 with min grade of D- AND ECET 20900 with min grade of D-

ECET 39300 Industrial Practice III

Class:0 Lab:0 Credit:0

Practice in industry with written reports of this practice by the co-op student.

ECET 39400 Industrial Practice IV

Class:0 Lab:0 Credit:0

Practice in industry with written reports of this practice by the co-op student.

ECET 39500

Class:0-5 Lab:0-5 Credit:0-5

ECET 39700 Electronic Project Engineering

Class:2 Lab:3 Credit:3

Attributes: Experiential Learning, ExL-Design Projects

Prerequisite: Junior standing and at least 12 hours of 30000 and/or 40000 level ECET courses. Introduction to electronic project engineering principles and techniques. Topics include technical feasibility studies, project specification, scheduling, testing, validation and cost estimating. Focus is on teamwork. These principles and techniques are emphasized through the design and execution of an electronic project.

ECET 40400 Wireless Communication & Networking

Class:3 Lab:3 Credit:4

An introduction to components, systems and the enabling technology underlying wireless communication and networking. Topics include basics of telegraphic engineering, wireless channel modeling, cellular telephony, signal coding, Inter Symbol Interference, Forward Error Coding techniques, modulation techniques, antenna diversity, spread spectrum communication, Frequency hopping mobile and multi-access communication. Introduction of wireless networking standards, infrared and laser communication, wireless location, and RFID systems.

Prereqs: ECET 30300 with min grade of D-

ECET 41000 Physics Of Radiologic Imaging

Class:3 Lab:0 Credit:3

Diagnostic imaging is among the rapidly advancing fields of non-invasive clinical medicine. This course will cover the physics principles behind imaging techniques. Quality assurance of diagnostic x-ray equipment and radiation safety also will be discussed. This course could be used as a Science/Math elective.

ECET 41200 Power Electronics Design And Applications

Class:3 Lab:3 Credit:3

Introduction to the application of power electronics in ac and dc motor drives, dc switching power supplies, solid-state relays, inverters, uninterruptible and standby power supplies and utility interfaces. The course covers the topologies and design of power trains, drivers for the switching devices, protection, and the strategies for control and power factor improvement.

Prereqs: ECET 31200 with min grade of D-

ECET 41300 Digital And Data Communications

Class:3-3 Lab:2-3 Credit:4

A study of modern digital communication systems. Topics include modulation techniques for digital transmission of data, error detection and correction, data compression techniques, Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA), etc. Topics in digital communication related to wired and wireless transmission media, along with fiber optics will be discussed. Topics in high speed switched networks will be introduced.

Prereqs: ECET 30300 with min grade of D-

ECET 41700

Class:3-3 Lab:2-3 Credit:4

ECET 42300 Current Trends In Telecommunication Technology

Class:3 Lab:0-3 Credit:3-4

Attributes: Variable Title

This course is designed to update the student on the latest advances in communication. This course will be continuously updated to keep the student abreast of new developments in the telecommunication field.

Prereqs: ECET 41300 with min grade of D-

ECET 44000

Class:3 Lab:3 Credit:4

ECET 44500 New Technology In Computer Systems

Class:3 Lab:0-3 Credit:4
Attributes: Credit By Exam, Variable Title
The impact of new technologies on computer hardware and software is studied.
Prereqs: ECET 21000 with min grade of D-

ECET 45500 Object Oriented System Design

Class:3-3 Lab:2-3 Credit:4
Attributes: Credit By Exam
Course deals with the Designing of Graphic User Interface (GUI) applications using Object Oriented Programming (OOP) methodology utilizing C++ language constructs. The course will cover the basics of Windows programming, developing Windows, Windows Functions and Messages with emphasis on interfacing with the physical objects communicating with the software objects in the realm of Computer Communications and Networking.
Prereqs: ECET 21000 with min grade of D-

ECET 45600 Operating System with Embedded System Design

Class:3 Lab:3 Credit:4
Attributes: Credit By Exam
The course deals with multi-processor system design. The multi-processor system's hardware and software design are integrated in conjunction with the underlying embedded operating system(s). Geographically distributed syb-systems are integrated in the system under the discourse and design.
Prereqs: ECET 20900 with min grade of D-

ECET 46200 Application Of Computers In Process Control

Class:3 Lab:3 Credit:4
Attributes: Credit By Exam
Application of computers to control industrial processes. Study of continuous- and descrete-time control algorithms; digital signal processing; and system control concepts applied to process control.
Prereqs: ECET 21700 with min grade of D-

ECET 46500 Advanced Topics in Computer Networks

Class:2 Lab:3 Credit:3
This course is a continuation of ECET 36700. Topics include emerging technologies in computer networks and related hardware, modeling, simulation, and analysis of existing LAN and WAN topologies. The course emphasizes hardware.
Prereqs: ECET 36700 with min grade of D-

ECET 46700 IP Telephony

Class:2 Lab:3 Credit:3
This course provides an introduction to converged voice and data networks as well as challenges faced by its various hardware and software technologies. Students will learn the architecture, components, programming, functionality and features of Voice Over IP (VoIP), such as Voice Manager, Voice-Mail solutions, Call Control, as well as Quality of Service (QoS) technologies.
Prereqs: ECET 36700 with min grade of D-

ECET 47000

Class:3 Lab:3 Credit:4

ECET 47200

Class:3 Lab:2 Credit:4

ECET 47500

Class:3 Lab:2 Credit:4

ECET 49000 Senior Design

Class:1-1 Lab:0-2 Credit:1-2
Attributes: Experiential Learning, ExL-Design Projects
An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agency, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. PHASE I includes, but is not limited to, faculty acceptance of project proposal, defining and limiting project objectives, initial research and source contacts, procurement of materials, and periodic progress reports.
Prereqs: ECET 30300 with min grade of D- AND ECET 31200 with min grade of D- AND ECET 39200 with min grade of D- AND ECET 45600 with min grade of D-

ECET 49100 Senior Design Project, Phase II

Class:0-5 Lab:0-6 Credit:2-5
Attributes: Experiential Learning, ExL-Design Projects
PHASE II includes, but is not limited to, continued research and finalized design, oral presentation to faculty and other interested parties, and a written technical report.
Prereqs: ECET 49000 with min grade of D-

ECET 49900 Electrical Engineering Technology

Class:0-9 Lab:0-19 Credit:1-9
Attributes: Variable Title
Hours and subject matter to be arranged by staff. Course may be repeated for credit up to nine hours.

ECET 52100 Solar Energy Systems

Class:3 Lab:0 Credit:3
An advanced course in solar energy topics, including radiation from the sun, technology and design of photovoltaic systems, solar lighting systems and solar-bio systems. Topics wil also include energy storage using hydrogen and new advancements in solar technology. Course may be offered in classroom, hybrid or distance.

ECET 55100 Optical Networking

Class:3 Lab: Credit:3
An introduction to components, systems, and the enabling technology underlying the optical networking. The enabling technology includes single-wavelength and Wavelength Division Multiplexing (WDM) systems. Optical layer architecture and design are the primary focus of the course, which includes current infrastructure architecture, the operation, deployment, administration and maintenance of networks, the fault and alarm handling, the protection strategiesm the access schemes and interfacing with wireless/copper network systems. The course also introduces latest advances like the free-space optical networking and the optical burst networking.

ECET 55200 Embedded System Design

Class:3 Lab:0 Credit:3
Pre-/Co-requisite: consent of instruction/Graduate standing with C or C++ Programming background. The course focuses on microcontroller hardware and software integration for embedded control applications. The architecture, programming and interfacing of Microchip PIC16F88 microcontroller are studied. Interconnection of components, peripheral devices, C language programming, debugging, input/output techniques, and use of PC-based software development tools are studied.

ECET 55300 Robotic System Design

Class:3 Lab:0 Credit:3
An introduction to mathematical modeling, design, planning and control of robotic systems. The course dwells from geometry, kinematics, statics, dynamics, and control theory. The content comprises of lectures, readings, and problem solving. It follows roughly the same sequence as the material presented in the text book, so it can be read in anticipation of the lectures. Graduate student standing in School of Technology with Mathematics course sequence required in the BS EET or equivalent.

ECET 55400 Hybrid & Battery Technology

Class:3 Lab:0 Credit:3
This course will review different sources of energy and perform the comparison between these sources. Battery and

storage technology, charging systems, and battery life cycle will be studied in detail. The storage for solar thermal systems, solar photovoltaic systems, wind, biomass and wave energy systems will be discussed and practical examples will be given. Hybrid Systems, the need for hybrid systems, range and type of hybrid systems will be discussed. Case studies of diesel-PC-battery, gas-PV-battery, biomass- diesel-battery systems, gas-electric and hybrid electric vehicles will be given. Graduate student status or Senior status with instructor approval. Leveling courses may be required based on student undergraduate degree.

ECET 55500 System Reliability

Class:3 Lab:0 Credit:3

This course deals with the statistics and probability methods used in reliability engineering. The primary focus of the course is on the statistical methods used to estimate a product's reliability from product failure data and concariate information. The course also touches on the probability modeling methods that use knowledge of system architecture and system component reliability to calculate system reliability. Graduate status or senior status with consent of instructor.

ECET 55600 Alternative Energy Technology

Class:3 Lab:0 Credit:3

This course is an introduction to various sources of energy and their process of extraction. Nonrenewable versus renewable energy sources and their harvesting technology will be studied. This will include wind, solar, fuel cells, biomass, geothermal, hydropower, and ocean energy. Most emphasis will be on renewable energy sources such as wind and solar, geothermal and oceanic energy technology and their harvesting systems. There will also be modeling simulation and analysis of wind and solar energy harvesting systems. Permission of instructor required.

ECET 55700 Advanced Printed Circuit Board Layout Design

Class:3 Lab:0 Credit:3

In this course, advanced Printed Circuit Board (PCB) design and layout are studied. Topics include PCB substrates material, design methodology, through hole technology (THT), surface mount technology (SMT), mechanical design aspects, EMI, electrical characteristics, power systems, multilayer and stack up. Design for testibility and manufacturability. Quality assurance in THT and SMT. The course also encompasses RF, high speed digital and mixed signal PCBs throughout the semester.

ECET 56100 Wireless Networking

Class:3 Lab:0 Credit:3

An introduction to components, systems and the enabling technology underlying the wireless networking. Topics include: basics of channel modeling, cellular telephony, coding, modulation techniques, antenna diversity, spread spectrum, ultra wideband, carrier hopping, mobile and multi-user access and location awareness technology. Wireless architectures, access, and design are the primary focus of his course, which includes architectures, fault and alarm handling, protection schemes and network management. Other topics include: paging, Wi-Fi, Wi-Max, CDMA, GSM, Bluetooth, adhoc networking, and interfacing with wireless/copper network systems. Graduate status in the School of Technology or other school required.

Prereqs: ECET 30300 with min grade of D

ECON 10100 Survey of Economics

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education

How economics forces such as globalization, technological changes, and public policy impact the lives of individuals. Examines the roles, the market-place and the pursuit of self-interest play in the behavior of an economic system. Presents economic systems alternative to the market/ capitalist one.

ECON 21000 Principles Of Economics

Class:3 Lab:0 Credit:3

Attributes: C COMPUTER - WINDOWS - ANY, TransferIN

Study of the basic economic institutions and the role they play in defining and achieving the nation's economic goals. Emphasis will be placed on the interdependent nature of the economy and the effects of economic decisions on the individual and society.

ECON 21100 Contemporary Economic Problems

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education
Econimic theory applied to current issues and an analysis of the economic aspects of public policy.
Prereqs: ECON 21000 with min grade of C

ECON 24000 Personal Financial Management

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY, TransferIN
Lectures and case analysis of managing one's personal finances; including budgeting, credit analysis, insurance, taxation, housing, estate planning, private and business investment. Not available for credit in Management concentrations.

ECON 25100 Microeconomics

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY, TransferIN
studies the choices individuals make and the incentives that influences those choices. Emphasis is on the incentives that determine market prices and resouce allocation. The role of public policy in influencing incentives and efficiency is also addressed.
Prereqs: MA 15300 with min grade of C

ECON 25200 Macroeconomics

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY, Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education, TransferIN
Analysis of the forces affecting national income, employment, interest rates, and the price level. Emphasis is placed upon the role of government fiscal and monetary policy in achieving full employment and stable prices.
Prereqs: ECON 25100 with min grade of C

ECON 31100 Environmental Economics

Class:3 Lab:0 Credit:3
This course provides an overview of environmental issues and legislation in the United States. Emphasis is placed on understanding and analyzing environmental problems applying basic principles of economics. This course explores the causes of environmental problems and evaluates the various policy instruments that are often used to address them at the international, national, state and local levels.
Prereqs: ECON 21000 with min grade of C OR ECON 25100 with min grade of C

ECON 32200 Public Finance

Class:3 Lab:0 Credit:3
The examination and analysis of public finance practices and problems in the federal fiscal system. Government activities that involve spending and taxation are analyzed applying basic principles of economics. Topics include public education, social security, healthcare, environment and tax systems. State and local government issues are also addressed.
Prereqs: ECON 21000 with min grade of C OR ECON 25100 with min grade of C

ECON 35100 Intermediate Microeconomics

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
Theoretical treatment of consumer and producer behavior. Analysis of demand, production, cost, product and factor markets leading to general equilibrium and welfare implications. Emphasis is upon the development of skills necessary to analyze the behavior of individual economic agents. Not available for credit in Management concentrations.
Prereqs: ECON 25200 with min grade of C

ECON 35200 Intermediate Macroeconomics

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY

Macroeconomic behavior. The determinants of consumption, investment, and the aggregate demand for assets. The joint determination of income, the price level, and the rate of interest. The role of government and elements of economic growth.
Prereqs: ECON 25200 with min grade of C AND MA 22500 with min grade of C

ECON 35300 Business Cycles

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
This course provides an analysis of business fluctuation and the impact of government policy instruments. Special emphasis is placed on how macroeconomic factors influence managerial and personal decision making.
Prereqs: ECON 25200 with min grade of C

ECON 36000 Econometrics

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
This course examines the statistical techniques used to analyze economic data, estimate causal effects, make predictions, and test economic theory. Students learn empirical skills used in analytical consulting, financial modeling, economic research, and by analysts in the private and public sectors. Emphasis is placed on estimating a single equation (e.g., a demand function) and the problems associated with such estimation. As part of the course, students will estimate equations using statistical software available in the Krannert computer lab.
Prereqs: MGMT 22500 with min grade of C

ECON 37500 United States Economic History

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
A study of the growth of the American economy from colonial times to the late nineteenth century. Emphasis is placed on application of the tools of economic analysis to historical questions concerning the sources and rate of growth, the relationships between growth and structural and institutional change, and the impact of industrialization on the quality of life in the American economy.
Prereqs: ECON 25100 with min grade of C

ECON 38000 Money And Banking

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
A course examining the role of financial intermediaries and central banks in market-oriented, open economies. Emphasis is placed upon the decision making of the United States' Federal Reserve System and its impact on the domestic and world economies.
Prereqs: ECON 25200 with min grade of C AND MA 22500 with min grade of C

ECON 41500 Contemporary Economic Problems And Policies

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
A study of economic policies designed to improve the attainment of economic goals. Emphasis is placed on the examination of the relationship between private decision making and public policy in such areas as health care, transportation, environmental protection, and income distribution.
Prereqs: ECON 25100 with min grade of C

ECON 41900 Managerial Economics

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
A comprehensive treatment of economic theory and analysis applied to business decisions. Both qualitative techniques are applied to managerial decison making situations. Emphasis is placed on applications of economic concepts and processes to practical business situations.
Prereqs: ECON 25100 with min grade of C AND MGMT 22500 with min grade of C

ECON 43400 International Trade

Class:3 Lab:0 Credit:3
Attributes: C COMPUTER - WINDOWS - ANY
The course is a study of the reasons, as well as the benefits and costs of international trade. The effects of trade policy (e.g., tariffs, trade agreements) are examined. Balance of payments, foreign exchange, and international macroeconomics linkages are also examined.
Prereqs: ECON 25200 with min grade of C AND MA 22500 with min grade of C

ECON 46100 Industrial Organization

Class:3 Lab:0 Credit:3
This course examines the determinants of firm and market structure and the resulting market performance in imperfectly-competitive markets. Advanced topics include advertising, research and development, imperfectly competitive international markets, and market integration. Emphasis is placed on using theoretical models of firm and industry behavior to explain and analyze real-world examples of firm behavior.
Prereqs: ECON 25200 with min grade of C

ECON 46200 The Economics Of Health Care

Class:3 Lab:0 Credit:3
The course analyzes economic forces that shape the health care industry. Course content includes the market structure of the health care industry, public and private health care delivery systems, reimbursement methods for services, and the labor market for health care workers.

ECON 46500 Economic Forecasting Techniques

Class:3 Lab:0 Credit:3
A course examining the statistical techniques of forecasting. Emphasis is placed on economic time series data and computer based methods of estimation and testing.
Prereqs: MGMT 22500 with min grade of C AND ECON 25200 with min grade of C

ECON 46700 Economics and The Law

Class:3 Lab: Credit:3
This course analyzes the conditions under which laws promote or hinder the efficient use of resources in a society. The course reviews the relevant microeconomic theory underlying social decision making. It next develops the basis for property rights analysis and contract law. Discussion also focuses on risk allocation and liability issues associated with tort law.
Prereqs: ECON 25100 with min grade of C

ECON 49000 Problems In Economics

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Supervised reading and reports in various subjects. Open only to a limited number of seniors with superior records in previous courses. Arrange with instructor before enrolling.

ECON 51300 Economic Theory

Class:3-4 Lab:0 Credit:3-4
Attributes: Credit By Exam
Theoretical analysis of a market economy with an emphasis on decision processes of managers. Consideration is given to micro aspects of price determination, utilization of resources and market organizations, and to aggregative concepts of national income and employment.

ECON 53400 International Trade Theory

Class:2-3 Lab:0 Credit:2-3
Attributes: Credit By Exam
Problems of the international economy addressed in the light of economic theory. Emphasis is on real, as opposed to monetary topics. Topics may include trade barriers, multinational corporations, technology transfer, the European economic community, and economic constraints on the sovereignty of nation-states.
Prereqs: ECON 25200 with min grade of B

ECON 59000

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title

ECON 60000
Class:3 Lab:0 Credit:3

ECON 60700
Class:3 Lab:0 Credit:3

ECON 60800
Class:3 Lab:0 Credit:3

ECON 60900
Class:3 Lab:0 Credit:3

ECON 61000
Class:3 Lab:0 Credit:3

ECON 61100
Class:3 Lab:0 Credit:3

ECON 61600
Class:3 Lab:0 Credit:3

ECON 61800
Class:3 Lab:0 Credit:3

ECON 62000
Class:3 Lab:0 Credit:3

ECON 62100
Class:3 Lab:0 Credit:3

ECON 62200
Class:3 Lab:0 Credit:3

ECON 62300
Class:3 Lab:0 Credit:3

ECON 63000
Class:3 Lab:0 Credit:3

ECON 63200
Class:3 Lab:0 Credit:3

ECON 66000
Class:3 Lab:0 Credit:3

ECON 66100
Class:3 Lab:0 Credit:3

ECON 67000
Class:3 Lab:0 Credit:3

ECON 67100
Class:3 Lab:0 Credit:3

ECON 67200
Class:3 Lab:0 Credit:3

ECON 67300
Class:3 Lab:0 Credit:3

ECON 67600
Class:3 Lab:0 Credit:3

ECON 67700
Class:3 Lab:0 Credit:3

ECON 69000
Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title

EDCI 12000 Technology in Society: Online Communication and Publishing
Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education
Students will learn the importance of writing professionally and academically in an online setting through the exploration of blog tools, including WordPress, one of the world's most popular blogging tools today. Permission of department required.

EDCI 13000 Technology in Society: Digital Media and Learning
Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education
Students will learn the importance of audio and video sharing mechanisms that exist on the Web and how to use them appropriately. They will explore issues related to presenting themselves professionally and adhering to copyright and other legal considerations.

EDCI 14000 Technology In Society: Web Tools and Social Networking
Class:1 Lab:0 Credit:1
Students will learn importance of presenting themselves professionally in online social spaces, which are popular and commonly used today. Such spaces include Facebook, Twitter, LinkedIn, YouTube and Google Plus. Permission of department required.

EDCI 20500 Exploring Teaching
Class:3 Lab:0 Credit:3
Students will become familiar with the work of teachers and begin to develop their educational philosophies through examining what it means to teach and to learn and the nature and purpose of schools. Students will critically evaluate teaching as their chosen profession.

EDCI 20600 Introduction to Teaching
Class:3 Lab:0 Credit:3
Students will analyze the work of professional educators and begin to develop their own educational philosophies through examining the nature of teaching and learning in American schools. Students will critically evaluate the profession and practice teaching, with a focus on current trends in K-12 education. Students will become familiar with teacher preparation requirements at the national, state and college levels.

EDCI 21200 Introduction To Early Education
Class:3 Lab:0 Credit:3
Reviews history and philosophy of kindergartens and other programs for young children. Classroom organization and management alternatives are analyzed. Emphasis is placed on meeting individual needs of young children through group and individual activities.
Prereqs: EDPS 22000 with min grade of C- AND EDCI 32300 with min grade of C- AND PR1 with a min test score of 176 AND PR2 with a min test score of 172 AND PR3 with a min test score of 175

EDCI 26000 Introduction To Computers In Education
Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Technology in Society, General Education
An introductory course covering instructional uses of microcomputers; the selection, evaluation, and management of hardware and software; and curricular applications for microcomputers.
Prereqs: CIS 20400 with min grade of C-

EDCI 30001 Lifelong Health and Wellness for Teachers and Children
Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course includes topics important to personal health, wellness, and disease prevention for adults and children. Students will learn about health and wellness, and how to incorporate healthy habits into their daily lives. In addition, the health and safety of children will be covered. This course concludes by considering ways in which elementary schools can provide opportunities to promote student health.
Prereqs: EDCI 35500 with min grade of C-

EDCI 30400 Literacy and Middle Childhood

Class:3 Lab:3 Credit:4
Explores aspects of child development and it relevance to literacy, including early and middle childhood developmental influences. This course examines methods and materials appropriate for grades 3-6. Topics will include the instruction and assessment of students.
Prereqs: EDCI 32100 with min grade of C- AND EDPS 37000 with min grade of C-

EDCI 30700 Corrective Reading For The Classroom Teacher

Class:2 Lab:3 Credit:3
Classroom procedures for the identification of reading difficulties; selection and application of appropriate methods and materials to provide corrective treatment. Emphasizes approaches to discovering and diagnosing reading; techniques for selecting materials in planning a remedial program, methods for teaching specific skills and techniques for evaluating progress. Appropriate laboratory and field experiences are provided.

EDCI 30800 Practicum In Reading For The Classroom Teacher

Class:1 Lab:4 Credit:3
The course is designed for prospective teachers in elementary or secondary schools who desire advanced supervised practice in teaching reading to pupils experiencing reading difficulty. The practicum will provide extended diagnostic teaching experiences in a wide range of reading settings. The seminar will evaluate diagnostic and tutoring strategies, methods, material, and achievement.
Prereqs: EDCI 30700 with min grade of C-

EDCI 30900 Reading in Middle and Secondary Schools

Class:3 Lab:0 Credit:3
A course for prospective secondary teachers. Emphasis is placed on techniques and strategies of teaching reading in secondary classrooms and incorporation of reading skills in the various content areas. Attention is given to teaching reading skills and providing for students of varying reading abilities. Provision for simulated activities, field experiences and observations.
Prereqs: EDCI 35500 with min grade of C- AND EDPS 26000 with min grade of C- AND PR1 with a min test score of 176 AND PR2 with a min test score of 172 AND PR3 with a min test score of 175

EDCI 31100 Media For Children

Class:3 Lab:0 Credit:3
Books, films, filmstrips, records, magazines and other resources provided in elementary media centers are studied and evaluated to meet the personal and educational needs of pupils in elementary schools. Emphasis is on wide reading of children's books and viewing of many media and their utilization with children.
Prereqs: EDPS 22000 with min grade of C- AND EDPS 26000 with min grade of C- AND EDFA 20000 with min grade of C- AND PR1 with a min test score of 176 AND PR2 with a min test score of 172 AND PR3 with a min test score of 175

EDCI 31200 The Early Education Program: Cognitive Areas

Class:2 Lab:2 Credit:3
Presentation of various techniques for beginning academic learning through language arts, social studies, math, science, and the arts for preschool and kindergarten.
Prereqs: EDCI 21200 with min grade of

EDCI 31300 The Early Education Program: Social And Emotional Areas

Class:2 Lab:2 Credit:3
Reviews the building of socialization skills. Emphasis is on dealing with feelings, expressing emotions, developing attitudes and self-concept. Explores parent-teacher cooperation.

EDCI 31500 Teaching Mathematics In The Elementary School

Class:3 Lab:3 Credit:4
Materials and methods used in teaching mathematics at various grade levels in the elementary school.
Prereqs: EDCI 30400 with min grade of C- AND EDCI 31600 with min grade of C- AND MA 13700 with min grade of C- AND MA 13800 with min grade of C- AND MA 13900 with min grade of C-

EDCI 31600 Teaching Social Studies In The Elementary School

Class:3 Lab:3 Credit:4
Provides experiences in developing skills for teaching social studies as well as understanding of appropriate subject matter; including evaluation techniques and procedures.
Prereqs: EDCI 32100 with min grade of C- AND EDPS 37000 with min grade of C-

EDCI 31700 Teaching Of Science In The Elementary School Curriculum

Class:3 Lab:3 Credit:4
Provides experiences in developing skills for teaching science as well as the understanding of appropriate subject matter: includes evaluation techniques and procedures.
Prereqs: EDCI 30400 with min grade of C- AND EDCI 31600 with min grade of C- AND SCI 31500 with min grade of C-

EDCI 32000 Principles of Practice In Elementary and Secondary Schools

Class:2 Lab:3 Credit:3
This course provides the pre-service teacher with classroom management principles and strategies for the elementary or secondary school classroom. This course will also highlight the teacher's role in the community and the community's role in the educational process. Because the nature of the classroom management differs substantially across developmental levels, separate course sections will be offered for elementary and middle/secondary students.
Prereqs: EDCI 32300 with min grade of C- AND EDCI 35500 with min grade of C-

EDCI 32100 Literacy and the Young Child

Class:3 Lab:3 Credit:4
Explores aspects of child development and its relevance to literacy, including early development influences and preschool learning. This course examines methods and materials appropriate for grades K-2. Topics will include the instruction and assessment of students.
Prereqs: EDCI 35500 with min grade of C- AND PR1 with a min test score of 176 AND PR2 with a min test score of 172 AND PR3 with a min test score of 175

EDCI 32300 Educational Technology for Teaching and Learning

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education
Explores classroom applications of educational technology in K-12 setting and addresses methods for effectively integrating technology into the teaching and learning process. Knowledge in this area can be gained through an understanding of the social stimulants to technological development and their effects on society. Students will learn about technology-based instructional resources and the pedagogical processes they can facilitate.

EDCI 32700 Strategies of Social Studies Instruction in Junior High &

Class:2 Lab:3 Credit:3
Middle Schools Acquaints students with developmentally appropriate content, materials, methods and literature relating to the social studies field generally and the intense teaching areas particularly. Includes an overview of the role of the middle school social studies teacher today, junior high/ middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction.
Prereqs: EDPS 26000 with min grade of C AND EDCI 32000 with min grade of C

EDCI 33100 English Teaching in Junior High and High Schools

Class:2 Lab:3 Credit:3
Acquaints students with developmentally appropriate content methods and materials for teaching English in Junior High/ Middle schools, includes an overview of the role of the Middle School teacher today, Junior High/Middle School philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction.

Prereqs: EDPS 26000 with min grade of AND EDCI 32000 with min grade of

EDCI 33200 Strategies of Foreign Language Instruction in Jr High

Class:2 Lab:3 Credit:3

and Middle Schools Acquaints students with developmentally appropriate content methods and materials for teaching foreign language both as a language experience and as a cultural experience. Comparative studies of various language teaching methods, analysis of current foreign language textbooks and accompanying materials, use of technology, and planning of instructional units are included. Field experiences are integrated with classroom instruction.

Prereqs: EDPS 26000 with min grade of C AND EDCI 32000 with min grade of C

EDCI 33400 Strategies of Mathematics Instruction in Junior High and

Class:2 Lab:3 Credit:3

Middle Schools Acquaints students with developmentally appropriate content materials and methods in teaching mathematics in the junior high/middle school. Includes an overview of the role of the middle school Mathematics teacher today, junior high/middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction.

Prereqs: EDPS 26000 with min grade of C- AND EDCI 32000 with min grade of C-

EDCI 33600 Strategies of Science Instruction in Junior High and Middle

Class:2 Lab:3 Credit:3

Schools Acquaints students with developmentally appropriate content materials and methods in teaching science in the junior high/middle school (include Life and Physical Science). Includes an overview of the role of the middle school science teacher today, junior high middle school philosophy, and planning of instructional units. Field experiences are integrated with classroom instruction.

Prereqs: EDPS 26000 with min grade of C-

EDCI 34100 English Teaching In Senior High, Junior High & Middle School

Class:2 Lab:3 Credit:3

Acquaints students with developmentally appropriate content methods and materials for teaching high school, junior high, and middle school English. Includes an overview of the role of the high school, junior high, and middle school English teacher today, the high school, junior high and middle school philosophy, the use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction.

Prereqs: EDPS 26000 with min grade of C- AND EDCI 35500 with min grade of C-

EDCI 34200 Strategies Of Foreign Language Instruction In Senior High,

Class:2 Lab:3 Credit:3

Junior High & Mi Acquaints students with developmentally appropriate content methods and materials for teaching senior high school, junior high and middle school foreign language and culture. Comparative studies of various teaching methods, analysis of current foreign language textbooks and accompanying materials, use of technology, and planning of instructional units are included. Field experiences are integrated with classroom instruction.

Prereqs: EDCI 35500 with min grade of C- AND EDPS 26000 with min grade of C-

EDCI 34400 Strategies Of Mathematics Instruction In Senior High, Junior

Class:2 Lab:3 Credit:3

High & Middle School Acquaints students with developmentally appropriate content, materials and methods for teaching mathematics in the high school, junior high and middle school. Includes an overview of the role of the high school, junior high and middle school Math teacher today, the high school, junior high and middle school philosophy, use of technology, and planning of instructional units. Field experience are integrated with classroom instruction.

Prereqs: EDPS 26000 with min grade of C- AND EDCI 35500 with min grade of C-

EDCI 34600 Strategies Of Science Instruction In Senior High, Junior

Class:2 Lab:3 Credit:3

High & Middle School Acquaints students with developmentally appropriate content materials and methods in teaching science in the high school, junior high and middle school (includes life and physical sciences). Includes an overview of the role of the high school, junior high and middle school science teacher today, the high school, junior high and middle school philosophy, use of technology and planning of instructional units. Field experiences are integrated with

classroom instruction.
Prereqs: EDPS 26000 with min grade of C- AND EDCI 35500 with min grade of C-

EDCI 34700 Strategies Of Social Studies Instruction In Senior High,

Class:2 Lab:3 Credit:3
Junior High and Middle School Acquaints students with developmentally appropriate content materials, methods and literature relating to the social studies field generally and the intense teaching areas particularly. Includes an overview of the role of the high school, junior high and middle school social studies teachers today, the high school, junior high and middle school philosophy, use of technology, and planing of instructional units. Field experiences are integrated with classroom instruction.
Prereqs: EDPS 26000 with min grade of C- AND EDCI 35500 with min grade of C-

EDCI 35500 Teaching And Learning K-12 Classroom

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Service Learning
Acquaints students with general methods of promoting the learning process in the K-12 school. Topics studied will include long-term and short-term instructional planning and evaluation; classroom organization including management, motivation of students, the use of media to promote instructional objectives; and individual and group learning procedures. Students will also study how curriculum goals are adapted and implemented in the classroom.
Prereqs: EDFA 20000 with min grade of C- AND EDPS 26000 with min grade of C- AND EDPS 22000 with min grade of C- AND PR1 with a min test score of 176 AND PR2 with a min test score of 172 AND PR3 with a min test score of 175

EDCI 36600 Use of Assessment in the K-12 Classroom

Class:3 Lab:0 Credit:3
This course will acquaint students with standardized tests currently used in K-12 settings such as ISTEP and interpretation of test data to inform planning and instruction. In addition this course will address use of standardized tests to identify and develop education programming for students with special needs.

EDCI 48900 Supervised Student Teaching

Class:6-9 Lab:0 Credit:6-9
Eight weeks of full-time student teaching in an academic subject or grade under the supervision of the public school teachers in charge of the classes and supervisors from university.
Prereqs: EDCI 31500 with min grade of C- AND EDCI 31700 with min grade of C-

EDCI 49000 Individual Research And Teaching Experience

Class:1-8 Lab:0 Credit:1-8
Attributes: Variable Title
Opportunity for undergraduate students to investigate particular problems in the field of education under supervision.

EDCI 49100 Topics and Issues in Education

Class:1 Lab:0 Credit:1
Attributes: Variable Title
Provides the student with the opportunity to strengthen the preparation program though the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment.

EDCI 49700 Supervised Teaching

Class:6-12 Lab:0 Credit:6-12
Attributes: Experiential Learning, ExL-Practicum
Admittance to Teacher Education, completion of education methods courses required for the major area. Teaching full-time in a school classroom under the supervision of the teacher in charge of the class and a university supervisor.
Prereqs: EDPS 37000 with min grade of C-

EDCI 49800 Supervised Teaching

Class:8-9 Lab:0 Credit:8-9
Attributes: Variable Title
Teaching full-time in a classroom under the supervision of the teacher in charge of the class and a University supervisor.

EDCI 49900 Supervised Teaching or Practicum in Endorsement Area

Class:3-9 Lab:0 Credit:3-9
Attributes: Variable Title
Teaching full-time in an endorsement area in a school classroom under the supervision of the teacher in charge of the class and a University supervisor. Completion of education courses required for the endorsement area and admittance to teacher education.

EDCI 50000 Foundation Of Literacy

Class:3 Lab:0 Credit:3
Survey course in the acquisiton of, and instruction in, reading, writing and other aspects of language.

EDCI 50100 Problems In Literacy Acquisition: Evaluation And Instruction

Class:2 Lab:3 Credit:3
Examines informal and standardized instruments useful for evaluating students who experience difficulties acquiring reading, writing, and other aspects of language. Discusses corrective/remedial instructional strategies appropriate for the classroom and clinic. Supervised practicum.
Prereqs: EDCI 50000 with min grade of B-

EDCI 50200 Reading In Middle And Secondary Schools

Class:3 Lab:0 Credit:3
A course designed for teachers and prospective teachers in subject matter areas of the junior and senior high school. May be taken as part of the sequence leading to Reading Specialist of or for the Junior High-Middle School endorsement program. Surveys of techniques and objectives of reading within content areas. Teaching experience helpful but not required.

EDCI 51100 Teaching Mathematics In The Elementary School

Class:3 Lab:0 Credit:3
Historical and current curriculum developments in mathematics education with implications for classroom practice; analysis of instructional strategies; cognitive development; use of research results.

EDCI 51300 Foundations of Educational Technology

Class:3 Lab:0 Credit:3
Provides a historical overview of the field and delineates the foundational knowledge, skill and attributes needed by professionals in the field of educational technology and instructional design. Students explore the field by engaging in collaborative projects, along with thinking and writing about various aspects of educational technology and the underlying instructional design theories.

EDCI 51400 Language Arts In The Elementary School

Class:3 Lab: Credit:3
Research, recent trends and current developement in the field of language arts and implications for classroom practices in the elementary school.;

EDCI 51700 Survey Of Science Education

Class:3 Lab:0 Credit:3
Introduction to current issues and research in science education, broadly organized under themes of learning, teaching and science curriculum.

EDCI 51900 Teachng English Language Learners

Class:3 Lab:0 Credit:3
This course focuses on current issues and techniques in ESL instruction and assessment for students at the beginning or intermediate stages of English language acquisition. Pre-K-12. Emphasis is on the design of materials and instruction that foster English language development in the content areas of the curriculum (i.e. Specialty Designed Academic Instruction in English SDAIE). Some familiarity with elementary teaching methods is assumed. Graduate status in the Collegel of Education is required.

EDCI 52600 Language Study for Educators

Class:3 Lab:0 Credit:3

Covers fundational knowledge in language and linguistics for teachers and educational researchers. Topics include structure and functions of language, language acquisition and development, language diversity, classroom discourse, language and media and literacy-language arts curriculum. A foundation for work in Literacy and Language Education. Graduate status in the College of Education is required.

EDCI 53201 School Curriculum: Leadership, School Culture and Change

Class:3 Lab:0 Credit:3

This course examines the needs of children and society, explores modern programs and procedures for developing a school community learning plan, and investigates ways to improve present school learning enviroments and curricula. Master's student standing.

EDCI 55400 Production of Instructional Materials

Class:1-3 Lab:0-4 Credit:3

Involves the design, development, and editing of digitally-based materials for use in computer-based learning environments. Includes planning and implementing text, graphics, audio, and video materials for use as communication and learning tools.

EDCI 56000 Educational Technology For Teaching And Learning

Class:3 Lab:0 Credit:3

Applications of microcomputers in educational and training settings. Course stresses appraisal, utilization, and evaluation of microcomputer software and hardware. Implementation and management of computers in instructional environments. Teaching of basic computer literacy concepts to learners of all ages.

EDCI 56100 Computer Assisted Instruction

Class:1 Lab:4 Credit:3

Major trends in computer-assisted instructing and computer- managed instruction are reviewed. Various learning design strategies are applied within an existing instructional language such as PLANIT or TUTOR, or between a computer managed instruction system and a general interactive computer language such as BASIC. Consideration is also given to adjunct computer-based instructional materials, instructional gaming, and lesson conversion from one language to another. The course involves the development, coding and tryout of instructional material interactively on a general purpose computer.

EDCI 56600 Educational Applications Of Hypermedia

Class:3 Lab:0 Credit:3

Examines educational applications of hypermedia tools. The class will utilize hypercard and its programming language hypermedia instructional materials. Incorporation of digitized media (sound, photographs, and motion clips) in hypermedia will be explored.

EDCI 56900 This course examines how design and development

Class:3 Lab:0 Credit:3

of instruction are impacted by the use of the computer as delivery system. A primary focus is on effective learning design strategies for computer mediated instruction. Learners will identify and apply effective design with emphasis on project management, planning, and implementation issues. Education or training materials will be devloped using appropriate authoring tools as determined by the instructional context.

EDCI 57200 Introduction to Learning Systems Design

Class:3 Lab:0 Credit:3

An introduction to the principles of designing instructional materials and to instructional communication theory and techniques. Topics include objectives, student characteristics, media selection, communication variables, message design, and systematic evaluation.

EDCI 57300 Instructional Development Practicum

Class:0-3 Lab:0-12 Credit:2-3

Provides supervised field experience in programs involving instructional design development activities. Students participate in ongoing projects in the design, development, and evaluation of instructional materials and training programs in business and industry, medical facilities, or other settings deemed appropriate.

EDCI 57400

Class:3 Lab:0 Credit:3

EDCI 57500 Foundations Of Distance Learning

Class:3 Lab:0 Credit:3

An introduction to the field of distance learning/education. Examination of basic concepts and principles of distance learning, the theoretical underpinnings of the field, research and application literature, and distance education delivery technologies. Focus is on integration of distance education technologies for learning and teaching.

Prereqs: EDCI 57200 with min grade of B-

EDCI 58000 Foundations Of Curriculum Development

Class:3 Lab:0 Credit:3

Introduction to major historical and philosophical sources of curriculum ideas. Significant forces influencing curriculum decision-making. Different theoretical approaches to the construction and analysis of curriculum.

EDCI 58500 Multicultural Education

Class:3 Lab:0 Credit:3

Concepts and theories of ethnicity and cultural pluralism: implications for educational change. Examination of value systems and cultural characteristics of various ethnic groups, different ethnic learning styles, ethnically pluralistic curriculum content and instructional materials, and conceptual curriculum design strategies for implementing multicultural education.

EDCI 58700 This course addresses the fundamentals of leadership

Class:3 Lab:0 Credit:3

and management of educational technology in a K-12 setting. Students will explore and evaluate computer hardware, software, networks, and lab management, including how they fit into education. This course is designed to provide prospectives on organizational leadership of educational technology, as well as providing future teachers with the ability to troubleshoot basic problems often associated with computers and software in the classroom.

EDCI 58900 Special Topics for Teachers

Class:1-4 Lab:0 Credit:1-4

Attributes: Variable Title

Consideration of appropriate professional problems of experienced educational personnel in workshop or in-service programs.

EDCI 59000 Individual Research Problems

Class:1-6 Lab:0 Credit:1-6

Attributes: Variable Title

Opportunities for students to study particular problems under the guidance of a member of the staff. This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work.

EDCI 59100 Special Topics In Education

Class:0-4 Lab:0 Credit:1-4

Attributes: Variable Title

Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular within the usual graduate class format.

EDCI 60100 Problems In Literacy Acquisition: Advanced Practicum

Class:1 Lab:5 Credit:3

Examines strategies for teaching elementary or secondary students who experience moderate to severe difficulties acquiring reading, writing, and other aspects of language. Supervised practicum.

Prereqs: EDCI 50000 with min grade of B- AND EDCI 50100 with min grade of B-

EDCI 60300 Reading In The Elementary School

Class:3 Lab:0 Credit:3

Research, recent trends and current developments in the field of reading instruction. Emphasis will be on improving developmental reading in the elementary school programs rather than on surveying remedial programs.

EDCI 60400 Social Studies In The Elementary School

Class:3 Lab:0 Credit:3

Social studies content and place in the modern elementary education curriculum. Materials, instruction techniques, evaluation procedures, and understanding the syntax of the structure of social studies. .

EDCI 60500 Teaching Science

Class:3 Lab:0 Credit:3

Analysis of historical developments and present trends in science education; the designing, implementation, and evaluation of science programs; the role of research in present and future developments.

EDCI 60800 Individualizing Instructions In The Elementary And Secondary

Class:3 Lab:0 Credit:3

School This course explores the foundations underlying individualized instruction, the preparation of the individualized instruction materials for the classroom, the role of research in individualized instruction, and the future trends and issues in individualized instruction.

EDCI 61200 Seminar In Literacy

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Recent trands and research in literacy. Topics provide in-depth study of literacy acquisition in educational settings.

EDCI 61300

Class:3 Lab:0 Credit:3

Attributes: Variable Title

EDCI 62400

Class:3 Lab:0 Credit:3

Attributes: Variable Title

EDCI 62600

Class:3 Lab:0 Credit:3

EDCI 64900 Assessment in Career and Technical Education

Class:3 Lab:0 Credit:3

Goals and rationale for evaluation in education and work training contexts; assessment and measurement methods, techniques, and procedures, reliability, validity, and accuracy; construction and selection of instruments; data and information collection, analysis and interpretation, meta evaluation, adaptations and modifications for special needs populations and using assessment data and information.

EDCI 66300 Interactive Multimedia

Class:3 Lab:0 Credit:3

Examines computer-based interactive multimedia theory, research, design, development, and evaluation. Includes digital audio/video production and design of interactive multimedia for stand-alone or online delivery.

Prereqs: EDCI 56100 with min grade of B- AND EDCI 57200 with min grade of B-

EDCI 67200 Advanced Practices In Learning Systems Design

Class:3 Lab:0 Credit:3

Applications of learning systems design to educational situations. In-depth treatment of learner analysis, task analysis, learning activities design, learner verification and summative evaluation. Focuses on the application of instructional design concepts and principles within authentic ID situations.

Prereqs: EDCI 57200 with min grade of B-

EDCI 67300

Class:3 Lab:0 Credit:3

EDCI 69500 Internship In Education

Class:1-10 Lab:0 Credit:1-10

Attributes: Variable Title

A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization.

EDCI 69800 Research MS Thesis

Class:1-18 Lab:0 Credit:1-18

EDFA 20000 History and Philosophy of Education

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education

How history and philosophy have informed school organization curriculum and teaching practice. Students develop their own philosophies of teaching. Topics include continuities and discontinuities of schooling, colonial period to present present. Conflicting demands placed upon schools. Issues of race, class and gender inform debates over school purposes and practices.

EDFA 22100 Society, School And The Professional Educator

Class:3 Lab:0 Credit:3

Examination of philosophical ideas and social forces which have shaped and continue to shape public education. Consideration of past, present and future relationships between school and society. The role of the professional educator in shaping these relationships. Introduction to basic legal responsibilities and ethical guidelines which determine professional conduct. Consideration of contemporary educational issues. Selected schools representing diverse educational philosophies, cultural settings and levels will be visited and studied.

EDFA 49000 Individual Research And Teaching Experience

Class:0 Lab:0 Credit:1-8

Attributes: Variable Title

Opportunity for undergraduate students to investigate particular problems in the field of education under supervision.

EDFA 49100 Topics and Issues in Education

Class:1 Lab:0 Credit:1

Attributes: Variable Title

Provides the student with the opportunity to strengthen the preparation program though the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment.

EDFA 51000

Class:3 Lab:0 Credit:3

EDFA 51200 Foundations Of Educational Administration

Class:3 Lab:0 Credit:3

Administration of education; roles of local, state, and federal government. Focus on purpose, organization, task areas, and processes of educational administration.

EDFA 51300 Educational Facilities Planning

Class:3 Lab:0 Credit:3

Systems approach as a basis for school facilities planning. Study directed toward procedures for solving facilities problems. Emphasis on techniques for developing and securing technical information.

EDFA 51600 School-Community Relations

Class:3 Lab:0 Credit:3

This course will stress concepts and principles relevant to school-community interaction. It will focus on the new roles of the public in education and will deal with problems encountered by education in communicating with the public.

EDFA 59000 Individual Research Problems

Class:0 Lab:0 Credit:1-6

Attributes: Variable Title

Opportunities for students to study particular problems under the guidance of a member of the staff. This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work.

EDFA 59100 Special Topics In Education

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular issue within the usual graduate class format.

EDFA 60600

Class:2-4 Lab:0 Credit:2-4

EDFA 60800 Business Management In Education

Class:3 Lab:0 Credit:3
Examination of internal and external determinants of school fiscal policy. Experiences with fiscal procedures for school budgeting and accounting, including preparation of a school budget.

EDFA 60900 Legal Aspects Of American Education

Class:3 Lab:0 Credit:3
Legal foundations of education as established by constitutional provisions, court decisions, opinions of attorney generals, administrative rulings and executive directives. Emphasis on legal theory and principles currently in state of change. Stress on case study method of investigation into educational law.

EDFA 61000 Supervision Of Instruction And Instructional Personnel

Class:3 Lab:0 Credit:3
Examination of the functions of school administration which focuses on achievement of instructional expectations of educational service. Emphasis on developing an individualized supervisory program for instructional personnel.

EDFA 61300 Clinic For Educational Leaders

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title
Topics will vary.

EDFA 61600

Class:3 Lab:0 Credit:3

EDFA 63700

Class:3 Lab:0 Credit:3

EDFA 69500 Internship In Education

Class:0-99 Lab:0-99 Credit:1-10
Attributes: Variable Title
A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization.

EDPS 10300 Introduction To Higher Education

Class:3 Lab:0 Credit:3
Attributes: Keep Room Assignment
This course is designed to assist and guide students in maximizing their potential for success at the university by promoting academic growth. Through collaborative learning, this course will promote the concept of life-long learning through the use of the following strategies: utilization of campus resources; goal setting; time management; diversity training; values exploration; career exploration; and critical thinking skills. This course is highly recommended for all freshman.

EDPS 22000 Psychology Of Learning

Class:3 Lab:0 Credit:3
An examination of the learner and learning. Study of the cognitive, social, physical, moral and personality development from early childhood through adolescence; implications of developmental stages for educational planning and intervention. Principles of basic learning theories, facilitative conditions and strategies for enhancing learning; classroom management as a means to foster the learner's development and learning. Survey of techniques for assessing the learner, learning and identification of learning dysfunctions.

EDPS 26000 Introduction To Special Education

Class:3 Lab:0 Credit:3
Attributes: Keep Room Assignment
A survey of the field of special education: foundations, areas of exceptionality, teaching strategies, and current issues and trends.

EDPS 28500 Diversity and Education

Class:2 Lab:2 Credit:3
This course integrates an understanding of diversity with principles of democratic education. Historical, Sociological, Cultural, Political, Philosophical, and Pedagogical Foundations of diversity are explored and related to issues of pedagogy in a pluralistic society. This course includes an experiential component.

EDPS 30300 Career & Life Planning Seminar

Class:3 Lab:0 Credit:3
This course is open to all students regardless of major or classification. Students will complete a personal assessment of their values, skills, personality traits, interests, life goals and life roles. Students will also become familiar with tools integral to a successful job search, including networking, resume writing, job search correspondence, and interviewing. Finally students will identify possible paths as they are guided through the process of integrating their knowledge of themselves with information they have gathered about the larger world of work.

EDPS 37000 Teaching Students with Diverse Learning Needs in K-12 Class

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Service Learning
The course develops a knowledge base and practical strategies that will enable teachers to help every student succeed--including students with disabilities, those with diverse cultural backgrounds, students with limited English proficiency, students who are considered "at risk" for academic failure, and those who are gifted and talented. Topics include planning and grouping strategies, classroom management, collaboration skills, curriculum adaptations, teaching strategies, and supported inclusive education. Field experiences are integrated with classroom instruction.
Prereqs: EDCI 35500 with min grade of C- AND EDPS 26000 with min grade of C- AND PR1 with a min test score of 176 AND PR2 with a min test score of 172 AND PR3 with a min test score of 175

EDPS 38000 Special Education Law For Teachers

Class:3 Lab:0 Credit:3
The purpose oof this course is to provide preservice teachers with a general understanding of the educational entitlement and civil rights of children with disabilities. Laws ensuring the provision of special education to students with disabilities are based on constitutional principles, written and enacted by the legislatures and administrative agencies and interpreted by the courts. It is through the interaction of these various components of the legal system legislative and judical that the field of special education has evolved. The knowledge and skills gained in this course shape the advocacy and ethical dispositions of the teacher.
Prereqs: EDPS 26000 with min grade of C

EDPS 43000 Creating And Managing Learning Environments

Class:3 Lab:0 Credit:3
This course develops skills in classroom organization and management at the elementary level. It includes classroom discipline, interpersonal skills, administrative aspects of teaching, working with families, building support networks, and a classroom design project.
Prereqs: EDCI 35500 with min grade of C

EDPS 45000 Teaching Students With Disabilities

Class:3 Lab:0 Credit:4
This course focuses on the education, differentation and use if technology with students who have special needs. Topics include the design and implementation of differentiated instruction based on individual need, implementing the strategies and interventions that have been established in individualized educational progams (IEP)s including the use of assistive technologies as appropriate, and applying behavior management principles to foster emotional and social development, and academic success. This course has a 45-hour field component.

Prereqs: EDPS 26000 with min grade of C

EDPS 49000 Individual Research And Teaching Experience

Class:0-8 Lab:0-16 Credit:1-8
Attributes: Variable Title
Opportunity for undergraduate students to investigate particular problems in the field of education under supervision.

EDPS 49100 Topics and Issues in Education

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
Provides the student with the opportunity to strengthen the preparation program through the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment.

EDPS 50000 Human Relations In Group Counseling

Class:2 Lab:2 Credit:3
Human relations skills; the functioning and use of group processes. Leadership styles are treated by the instructional component. Students participate in laboratories designed to increase personal awareness and relationship skills.

EDPS 50100 Introduction To School Counseling

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Treats the history, principles, services, and theoretical development of guidance with consideration given to counselor role and functions, current practices, and emerging trends and issues.

EDPS 50300 Introduction To Mental Health Counseling

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
Provides an overview of mental health counseling as it relates to community issues and needs. Roles and settings for mental health counselor and specific intervention skills will be stressed.

EDPS 50500 Foundations of Career Development and Assessment

Class:3 Lab:0 Credit:3
Treats career development theories which emphasize aspects of the self in decision-making, occupational classification systems, and education and vocational information with applications to individual and group counseling.

EDPS 50700 Counseling Multicultural and Diverse Populations

Class:3 Lab:0 Credit:3
Counseling strategies for multicultural and diverse populations encountered by helping professionals. Among populations considered are ethnic and cultural minorities, older persons, the gifted, the disabled.

EDPS 50900 Expressive Arts: Music, Movement & Spiritual Expression

Class:3 Lab:0 Credit:3
This course provides an introduction to the creative process and the use of that process in development of music, movement and spiritual expression in traditions and cultures of healing. The course will include definitions, historical roots, theoretical underpinnings, and basic elements of music, movement and spiritual expression in art therapy.

EDPS 51500 Applied Behavior Analysis for Teachers

Class:3 Lab:0 Credit:3
Application of learning theory, measurement procedures, verification of functional relationships, and developing knowledge of current significant research in applied behavior analysis.

EDPS 51600 Addiction Seminar I:HIV/AIDS and Dual Diagnosis

Class:3 Lab:0 Credit:3
This course is inteded to provide awareness and knowledge about concomitant disorders and substance use disorders and the assessment and recommended treatment for dually diagnosed clients. The course will also provide an overview of HIV/AIDS andits relation to substance use disorders. These topics will be addressed within a culturally aware and competent framework.

EDPS 51700 Addictions Seminar II: Ethics, Criminal Justice, and

Class:3 Lab:0 Credit:3

Social Systems This course is intended to provide awareness and knowledge about the ethics of working within the substance abuse setting. Students will receive a better understanding of how this population is represented within the criminal justice system, and how other social systems can be used in both prevention prevention and treatment of substance abuse. The ICAADA core functions covered are Orientation, Client Education and Consultation.

EDPS 52100 Counseling And Psychopathology

Class:3 Lab:0 Credit:3

Development of an understanding of the DSM-VT-R, diagnostic, and treatment planning. Permission of department required.

EDPS 52200 Crisis Intervention

Class:3 Lab:0 Credit:3

This course provides in-depth study of the nature of crises and crisis intervention. Students will learn crisis theory, crisis intervention models, and practical skills for effective crisis intervention. Over the course of the semester, we will attend a variety of crises including crises related to suicide, violence, victimization, psychiatric illness, chemical dependency, individual or family-level trauma, and community-wide disaster. Emphasis will be placed on the counselor's development of crisis assessment, management, and short-term intervention skills. Special attention will be given to cultural, ethical, and legal considerations.

EDPS 52900 Techniques of Addictions Counseling: Counseling Skills,

Class:3 Lab:0 Credit:3

Groups, and Process This course is designed to help students develop and apply basic counseling skills and helping attitudes for addictions counseling. Self-evaluation, giving and receiving feedback and reflection upon the development of clinical skills and ethical tendencies is an essential part of this course. The ICAADA core functions of Assessment Intake, Treatment Planning, Counseling, and Report/Record Keeping will be included.

EDPS 53000 Advanced Educational Psychology

Class:3 Lab:0 Credit:3

Theories of learning and development, research on instruction and learning, and principles of measurement applied to educational problems.

EDPS 53100 Introduction To Measurement And Evaluation

Class:3 Lab:0 Credit:3

An introduction to the basic concepts and principles of measurement and evaluation with special emphasis on descriptive statistics, and teacher made and standardized tests.

EDPS 53200

Class:3 Lab:0 Credit:3

EDPS 53300 Introduction To Educational Research I: Methodology

Class:3 Lab:0 Credit:3

An intoductory course in educational research and evaluation methodology which considers the various methods of educational research, the formulation of research hypotheses, and the preparation of research reports.

EDPS 53900 Ethics & Professinal Identity for Mental Health Counselors

Class:3 Lab:0 Credit:3

This seminar is designed to introduce students to ethical issues that occur in mental health counseling and psychotherapy, resources to assist in the resolution of these issues and consideratins needed. Permission of Department Required.

EDPS 54000

Class:3 Lab:0 Credit:3

EDPS 54100

Class:3 Lab:0 Credit:3

EDPS 54200

Class:3 Lab:0 Credit:3

EDPS 56300 Identification, Evaluation, And Assessment Of Exceptional

Class:3 Lab:0 Credit:3

Individuals. Advanced procedures for educational assessment of children who are exceptional. Emphasis is given to criterion- referenced, and observational assessment instruments and procedures. Practicum to operationalize skills and knowledge.

EDPS 56400 Historical Perspectives, Etiology and Characteristics of

Class:3 Lab:0 Credit:3

Attributes: Keep Room Assignment, Variable Title

Individuals With Disabilities. Includes basic concepts (historical perspective, definition, classification, assessment and etiology); introduction to levels of retardation; life span issues and programs; and current teaching trends.

EDPS 56500 Intervention Strategies And Research (D, I, M, E)

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Includes: (1) mental retardation; (2) learning disabilities (3) emotional disturbance. One topic is dealt with in each enrollment.

EDPS 56600 Supervised Teaching In Special Education (D,I,M,E,S)

Class:0-16 Lab:0 Credit:1-16

Attributes: Variable Title

Supervised teaching of students with (D) Learning Disabilities, (M) Mildly Mentally Handicapped, (E) Emotional Disturbance. Laboratory experience is required. One topic is dealt with in each enrollment.

EDPS 56700

Class:3 Lab:1 Credit:3

EDPS 56800 Social, Legal And Ethical Issues In Special Education

Class:3 Lab:0 Credit:3

Survey of difference and similarities of children with expectionality, including their nature and characteristics related to their developmental and educational needs. Analysis and practical application of social, legal, and ethical issues in the field of special education.

EDPS 57100 Advanced Assistive Technology Applications

Class:3 Lab:0 Credit:3

Introduction and overview of assistive technology for communication, education, employment, recreation, and daily living activities.

EDPS 58900 Special Topics Teachers

Class:1-4 Lab:0 Credit:1-4

Attributes: Variable Title

Consideration of concerns of experienced educational personnel related to educational development, technology, methodology and curriculum. Designed for workshop or inservice formats. Not available for use in graduate degree programs.

EDPS 59000 Individual Reasearch Problems

Class:0-6 Lab:0 Credit:1-6

Attributes: Variable Title

Opportunities for students to study particular problems under the guidance of a member of the staff. This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work.

EDPS 59100 Special Topics In Education

Class:0-4 Lab:0-99 Credit:1-4

Attributes: Variable Title

Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, and practical aspects of a particular issue within the usual graduate class format.

EDPS 60000 Counseling Theories And Techniques

Class:3 Lab:0 Credit:3

Examination of major counseling theories and counseling techniques, professional and ethical issues.

EDPS 60100 Counseling Theories And Techniques Laboratory

Class:0 Lab:3-6 Credit:3

Attributes: Keep Room Assignment

Use of counseling techniques in a supervised laboratory; application of theories and techniques within varying employment settings.

EDPS 60900 Program Development And Organization In Human Services

Class:2-3 Lab:0 Credit:2-3

Issues and procedures in program development management, organization, and administration for school guidance, college student affairs, and mental health services. Also treats administrative theory, intervention strategies, staff development and evaluation.

EDPS 61000 Counseling Practicum

Class:3 Lab:0 Credit:3

Attributes: Variable Title

EDPS 60100 is field experience for first year master's students in school counseling, consisting of a minimum of 100 hours in a school under the supervision of both a site supervisor and a campus supervisor. Students must have permission of instructor to enroll.

Prereqs: EDPS 60000 with min grade of B- AND EDPS 60100 with min grade of B-

EDPS 61400 Advanced Counseling Practicum

Class:0 Lab:10 Credit:1-3

Supervised use of personal and career counseling techniques applied to complex and difficult client situations.

EDPS 62000 Counseling Seminar

Class:0-4 Lab:0 Credit:1-4

Attributes: Variable Title

Recent investigation and research in (1)counselor supervision, (2)professional issues, (3)counseling theories, (4)education of counselors and student personnel workers, (5)counseling methodology, (6)vocational development, (7)elementary school counseling, (8)counselor consultation, and (9)other relevant topics.

EDPS 66400 Seminar In Special Education (D, I, M, E, S)

Class:0-4 Lab:0 Credit:1-4

Attributes: Variable Title

A critical analysis of research, practice, and selected problems in special education for advanced graduate students.

EDPS 69500 Internship In Education

Class:0-99 Lab:0 Credit:1-10

Attributes: Variable Title

A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization.

EDPS 69800 Research MS Thesis

Class:0 Lab:0 Credit:1-18

ENGL 00700 Writing Laboratory.

Class:0 Lab:1 Credit:0

Emphasis on patterns of organization and fundamentals of usage in composition for ENGL 10400 students with an English Placement Score between 33 and 37.

ENGL 01110 Community Learning

Class:3 Lab:0 Credit:0

This course should provide students with the opportunity to practice English communication with native speakers while completing community service. Students will travel to an off-campus location in the community. At the sites, students may be engaged in activities such as games, sports, arts and crafts, tutoring, language teaching, intercultural activities with community members such as elementary school students.

ENGL 01800 Fundamentals Of Reading

Class:3 Lab:0 Credit:0

Aims to build the student's functional reading level to meet the requirements of college textbooks. Stresses improvement of the basic silent reading skills of word recognition, vocabulary building, literal comprehension and rate fluency. Some instruction in study techniques. Individualized and performance-oriented.

ENGL 01900 English Composition For English As A Second Language (ESL)

Class:3 Lab:1 Credit:0

Students. English composition for those students whose common use of English indicates a need for instruction in English as a second language. An equivalent of ENGL 02000.

ENGL 02000 Fundamentals Of Writing

Class:3 Lab:1 Credit:0

A review of writing fundamentals for those who need further training and practice. Emphasis will be on English grammar, punctuation, spelling, sentence structure, and paragraph organization.

ENGL 02100 Low-Intermediate Grammar & Writing

Class:6 Lab:0 Credit:0

This is a low-proficiency course that focuses on skills and strategies for effective academic writing. This course focuses on developing basic ability to write effectively in English through extensive practice in pre-writing, drafting, revising and editing. Students engage in discussion and small group work to develop and improve basic composition skills, including organization, rhetoric, grammar and mechanics and sentence structure.

ENGL 02200 Intermediate Grammar and Writing

Class:6 Lab:0 Credit:0

Prerequisite: ENGL 02100 or TOEFL score, a writing sample, or an interview. This course focuses on skills and strategies for effective academic writing. This course focuses on the development of composition skills, with emphasis placed on organization, sentence structure, grammar, and idea clarity. Students engage in discussion and small group work to develop and improve composition skills including organization, rhetoric, grammar and mechanics and sentence structure.

Prereqs: ENGL 02100 with min grade of P

ENGL 02300 Advanced Grammar and Writing

Class:6 Lab:0 Credit:0

Prerequisite: ENGL 02200 or TOEFL score, a writing sample or an interview. This course focuses on skills and strategies for effective academic writing in the mainstream academic setting. Students at this level are expected to write at an advanced level. Students practice various rhetorical aspects of writing while focusing on improving the cohesion, unity and clarity of ideas. Students engage in discussion and small group work to enhance and develop advanced composition skills for academic writing.

Prereqs: ENGL 02200 with min grade of P

ENGL 02400 Building skills with stories is a multi-skills, foundations-

Class:3 Lab:0 Credit:0

level course. In this course, students will read fictional stories and use these stories as the context for practicing a variety of skills. A focus will be on developing vocabulary through target words in the stories and through expansion activities. Students will also work on grammar, pronunciation, and spelling as well as improve their writing through responses to the stories and their speaking through discussions about them. Permission of department required.

ENGL 02500 Introduction to American Culture

Class:3 Lab:0 Credit:0

This is an elective for students with Low-Intermediate skill level. Each section of ENGL 02500 will introduce American

Culture through different themes and skill emphasis, such as film, reading and writing short stories, etc.

ENGL 02600 Foundations Writing

Class:6 Lab:0 Credit:0

is an introductory writing course that focuses on skills and strategies for writing sentences and paragraphs. Through class activities and writing assignments, this course will build your grammar skills and improve your writing fluency. In the second half of the semester, you will be introduced to academic paragraphs. Permission of department is required.

ENGL 03000 Listening and Speaking

Class:6 Lab:0 Credit:0

Foundations Listening & Speaking is a course intended for students who did not meet the qualifications for admittance into the ELP's Level 1 low-intermediate course. The purpose of this course is to prepare the students for successful matriculation into Level 1 and to provide them with solid listening and speaking skill sets in English; skills and abilities that will surely increase their changes of future academic success overall. Permission of department required.

ENGL 03100 Low-Intermed Listening and Speaking

Class:6 Lab:0 Credit:0

Prerequisite: TOEFL score, a writing sample or an interview. This course focuses on developing basic listening and conversation skills. Students practice listening and speaking about various topics, both inside and outside of the classroom, in order to establish a solid foundation in this essential skill. A wide variety of listening excerpts, discussion prompts and small-group tasks, assist in the development of listening and oral fluency and accuracy.

ENGL 03200 Intermediate Listening and Speaking

Class:6 Lab:0 Credit:0

Prerequisite: ENGL 03100 or TOEFL score, a writing sample or an interview. This course focuses on strategies for the further development of listening skills and oral fluency in an academic context. Students at this level practice listening and speaking about various personal and academic topics, both inside and outside the classroom in order to expand these abilities. A wide variety of listening excerpts, discussion prompts and small-group tasks, assist in the development of listening comprehension and oral fluency and accuracy.

Prereqs: ENGL 03100 with min grade of P

ENGL 03300 Advanced Listening & Speaking

Class:6 Lab:0 Credit:0

Prerequisite: ENGL 0320 or TOEFL score, a writing sample, or an interview. This course focuses on skills and strategies for the further development of effective academic and social listening and speaking skills in English. Students at this level are expected to practice listening and speaking extensively about various topics, both inside and outside the classroom, in order to expand their listening abilities. A wide variety of listening excerpts, discussion prompts, and small-group tasks, prepare students for listening and speaking in a mainstream academic setting.

Prereqs: ENGL 03200 with min grade of P

ENGL 03500 English Communication Skills

Class:3 Lab:0 Credit:0

This is an elective for students with Intermediate skill level designed to provide students with additional instruction in reading, writing or listening and speaking. Each section of this elecitve will approach English language skills through a different theme and skill emphasis, such as film, reading and writing short stories, American culture, etc.

ENGL 04000 Reading

Class:6 Lab:0 Credit:0

Foundations is designed for beginning students with limited or no basic formal instruction in reading in English. The purpose of this course is to develop a strong foundation in basic reading literacy skills, the General Service List vocabulary, beginning academic vocabulary, and spelling foundations to improve reading skills. Students at this level engage in silent sustained reading primarily of non-fiction, high interest texts in groups with teacher support. Permission of department required.

ENGL 04100 Low-Intermediate Reading Comprehension

Class:6 Lab:0 Credit:0

Prerequisite: Placement is based upon TOEFL score, a writing sample or an interview. This is a course that focuses on skills and strategies for effective reading at a basic level. Students at this level are expected to read both inside and outside the classroom in order to improve their reading skills. Student will practice a number of reading strategies for reading faster, understanding vocabulary in context and will practice using strategic reading skills. Discussion and small group work follow reading selection to help develop critical reading and thinking skills.

ENGL 04200 Intermediate Reading Comprehension

Class:6 Lab:0 Credit:0

Prerequisite: ENGL 04100 or TOEFL score, a writing sample or an interview. This course focuses on skills and strategies for effective academic reading. Students at this level are expected to read extensively, both inside and outside the classroom, in order to improve and refine their reading skills. Student practice a number of reading strategies for reading faster, understanding vocabulary in context and will practice using strategic reading skills. Discussion and small group work follow reading sections to help develop critical reading and thinking skills. The increase in contact hours will provide the time needed for effective instruction.

Prereqs: ENGL 04100 with min grade of P

ENGL 04300 Advanced Reading Comprehension

Class:6 Lab:0 Credit:0

Prerequisite: ENGL 04200 or TOEFL score, a writing sample, or an interview. This is an advanced reading course that focuses on skills and strategies for effective academic reading. Students at this level are expected to read extensively, both inside and outside the classroom, in order to improve and refine their reading skills. Students practice a number of reading strategies for reading faster, and understanding vocabulary in context. Discussion and small group work follow reading selections to help develop critical reading and thinking skills.

Prereqs: ENGL 04200 with min grade of P

ENGL 04500 Academic Study Skills

Class:3 Lab:0 Credit:0

This is an elective for students with Advanced skill level designed to provide students with additional instruction in reading, writing or listening and speaking. Each section of this course will approach academic study skills throug a different theme and skill emphasis such as film, reading and writing short stories etc. This course may not be substituted for ENGL 10400 or ENGL 10500 nor be counted toward degree requirements.

Prereqs: ENGL 03500 with min grade of S

ENGL 05100 Topics in ESL

Class:1-6 Lab:0 Credit:0

Attributes: Variable Title

Variable Title, variable contact hours. May be repeated as topics vary. This course is available to students at all skill levels. This course may not be substituted for ENGL 10400 or ENGL 10500 nor be counted toward degee requirements.

ENGL 10000 English Composition

Class:3 Lab:2 Credit:4

Attributes: Credit By Exam, Gen Ed-English Comp, Gen Ed-Written Communication, General Education

For first-year students needing intensive instruction in the fundamentals of English composition as preparation for enrollment in other composition courses. Upon completion of this course, students will be assigned to subsequent composition courses according to the teacher's recommendation.

ENGL 10400 English Composition I

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-English Comp, Gen Ed-Written Communication, General Education, TransferIN

Emphasis on the organization of the expository theme. Directed writings of themes based on personal experience, on the relationship between experience and language, and on the relationship between experience and ideas.

ENGL 10500 English Composition II

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Design Projects, ExL-Service Learning, Gen Ed-English Comp, Gen Ed-Written Communication, General Education, TransferIN

The second half of the basic composition sequence. Emphasis on the logical and rhetorical problems involved in writing

discursive essays. Directed writing of themes based largely on reading of discursive prose and imaginative literature. Normally to be taken immediately following ENGL 10400 in the freshman year.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 10600 First-Year Composition.

Class:4 Lab:0 Credit:4
Attributes: Gen Ed-Written Communication, General Education, TransferIN
Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research- based writing.

ENGL 10800 Accelerated First-Year Composition

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam, Gen Ed-English Comp, Gen Ed-Written Communication, General Education
An accelerated composition course that substitutes for English 10400 for students with superior writing ability.

ENGL 18600 College Reading And Study Skills

Class:3 Lab:0 Credit:3
Emphasizes development of effective textbook reading and review strategies, acquisition of college-level vocabulary, utilization of library resources, improvement of such classroom learning skills as lecture note-taking and test taking.

ENGL 20100 The Nature Of Literary Study

Class:3 Lab:0 Credit:3
Attributes: Literature
A study of literary concepts and critical procedures as applied to representative poetry, fiction, and drama, with practice in critical writing.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 22000 Technical Report Writing

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-English Comp, Gen Ed-Written Communication, General Education, TransferIN
A study of application of the principles of good writing in industrial reporting with emphasis on the techniques of presenting information graphically as well as in a clear, concise written form.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 23100 Introduction To Literature

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam, Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, Literature, TransferIN
Reading and discussion of major works in English, American, and continental literature to develop an understanding of style, form, and ideas characteristic of great works. Emphasis on various types of literature.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 23600 Mothers And Daughters In Literature

Class:3 Lab:0 Credit:3
Attributes: Literature
Course acquaints students with a new body of literature by women. Students explore mother-daughter relationships as presented in this literature to enhance their understanding of feminist approaches to life. Not open to students with credit in WOST 23600.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 23700 Introduction To Poetry

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam, Literature, TransferIN
How to read poetry intelligently; function of diction, metrics, figures of speech, and theme; place of a poem in history, uses of poetry, etc.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 23800 Introduction To Fiction

Class:3 Lab:0 Credit:3
Attributes: Literature
Readings and discussion of selected short stories and several novels, to promote awareness, understanding, and appreciation of the range, values, techniques, and meanings of reputable modern fiction.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 24000 Survey Of The Literature Of England: From The Beginnings

Class:3 Lab:0 Credit:3
Attributes: Literature
Through The Neoclassical Period. An introduction to English literature from the Anglo-Saxon age through the eighteenth century neoclassical period, with emphasis on such major writers as Chaucer, Spenser, Shakespeare (non-dramatic work), Donne, Milton, Dryden, Pope and Johnson. The course also treats significant minor writers in their relation to literary movements and ideas.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 24100 Survey Of The Literature Of England: From The Rise Of

Class:3 Lab:0 Credit:3
Attributes: Literature
Romanticism to the Modern Period. A continuation of ENGL 24000, this course surveys English literature (excluding the novel) from the late eighteenth century to the twentieth century, with emphasis on such major writers as Blake, Wordsworth, Keats, Tennyson, Arnold, Blake, Hardy, Yeats, T.S. Eliot, and Auden. The course also treats significant minor writers in their relation to literary movements and ideas.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 25000 Great American Books

Class:3 Lab:0 Credit:3
Several books, such as The Scarlet Letter, Moby Dick and Walden will be read and discussed as to their literary qualities and their cultural significance.
Prereqs: ENGL 10400 with min grade of D-

ENGL 25400 Great British Books

Class:3 Lab:0 Credit:3
An examination of great British works within the context of their intellectual, social, and literary traditions. Works such as Hamlet, Gulliver's Travels, Pride and Prejudice and To the Lighthouse will be discussed.
Prereqs: ENGL 10400 with min grade of D-

ENGL 26000 Introduction to World Literature: To 1700

Class:3 Lab:0 Credit:3
Attributes: Literature, TransferIN
A comparison of some of the major works of world literature in translation, from the beginnings to 1700. Emphasis on Greek, Roman, Eastern and early European literature.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 26100 Introduction To World Literature: Since 1700

Class:3 Lab:0 Credit:3
Attributes: Literature, TransferIN
A comparison of some of the major works of world literature in translation, from 1700 to present. Emphasis on Continental, African, Latin-American and Eastern literature.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 28600 The Movies

Class:2-3 Lab:0-3 Credit:3
This course is a comprehensive introduction to the aesthetic and history of movies. Students will learn how films are constructed, how they represent and challenge cultural and aesthetic values, and how they are produced and distributed. The primary focus of the course is on narrative movies made in the United States, though some narrative movies and foreign films are included.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 30200 Publication Design.

Class:3 Lab:0 Credit:3

This course focuses on the design, layout and publication of various documents using personal computers. Emphasis is given to principles of publication design and page makeup, typography, and the use of personal computers in business publishing.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 30400 Advanced Composition

Class:3 Lab:0 Credit:3

Designed for students who wish additional training in composition beyond the basic requirements. Extensive practice in the writing of mature expository, critical, and argumentative prose.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 30700 Written And Oral Communication For Engineers

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-English Comp, Gen Ed-Technology in Society, Gen Ed-Technology in Society, Gen Ed-Written Communication, General Education

Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics.

Prereqs: (ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-) AND COM 11400 with min grade of C- AND (CE 27500 with min grade of C- OR ECE 20200 with min grade of C- OR ME 27500 with min grade of C-)

ENGL 30800 Modern English Grammar

Class:3 Lab:0 Credit:3

An introduction to the study of traditional, structural, and generative-transformational analyses of English. Some attention to new directions in grammatical description and application.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 31000 Introduction To Popular Culture

Class:3 Lab:0 Credit:3

Attributes: Literature

A survey of mass culture, popular arts and media, including literature (dime novels and westerns), art and architecture (magazine illustrators and prefabricated housing), radio-TV-film, and music (ballads, jazz, rock), from mid-nineteenth century through present day. When appropriate, field trips will be scheduled.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 31200 Ethnic American Women Writers

Class:3 Lab:0 Credit:3

Attributes: Literature

This course explores works by women writers of various ethnic backgrounds living and writing in America during the last century. The emphasis is on ways in which a writer's ethnicity informs her writing and influences the content of her literary works. The course includes women writers of all ethnic backgrounds, including Native American, African American, Asian American, Hispanic American, Euro-American, and Jewish American. The major purpose is to introduce students to varied cultural voices in dialogue with American traditions as women writers express conflicting experiences within dual cultures.(Cross-listed as WOST 31200.)

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 31300 African American Women's Fiction

Class:3 Lab:0 Credit:3

Attributes: Literature

examines novels and short stories produced since the mid-nineteenth century, including works by Toni Morrisin and Alice Walker, as well as Post- Reconstruction, Harlem Renaissance, modern and contemporary authors as Pauline Hopkins, Nella Larsen, Ann Petry and Gloria Maylor. The course consentrates on African American women's fictional tradition, including critical theory.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 31400 Modern Poetry

Class:3 Lab:0 Credit:3
A study of poetry and poetic forms beginning with the 20th century. The course may examine major figures in North American, British, Continental, and Latin American traditions among others. Emphasis may include studies in prosody, major movements and major themes.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 31500 American Folklore and Folklife in the US

Class:3 Lab:0 Credit:3
This course is an introduction to the study of Folklore and Folklife in the United States. The course content will include the basic concepts of oral traditions, customs, and material culture. Students will complete a semester project of collecting and analyzing some expression of Folklore and Folklife.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 31900 Creative Writing

Class:3 Lab:0 Credit:3
Attributes: TransferIN
An introduction to the writing of genres traditionally considered as creative, such as short stories, drama, poetry, and creative non-fiction.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 32000 By And About Women

Class:3 Lab:0 Credit:3
Attributes: Literature
Course emphasizes significant texts by major women writers such as Atwood, the Brontes, Cather, Chopin, Dickinson, Eliot, Glaspell, Hurston, Jewett, Lessing, Mansfield, Morrison, Oates, Rich, and Woolf. Although the class will study mainly 19th and 20th century it will not be restricted to these. In addition, the readings will also include a variety of literary genres: novel, short fiction, poetry, and drama. Cross listed as WOST 32000.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 32300 Sexual Identity in Literature

Class:3 Lab:0 Credit:3
This course explores how sexual identity informs literacy works. Fiction, poetry, drama, personal narrative and essays from lesbian, bisexual, gay and transgendered (LGBT) writers may be included.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 32400 International Women's Literature

Class:3 Lab:0 Credit:3
Attributes: Literature
Course presents an international perspective on women's social, political, economic and imaginative lives. The major emphasis will be global literatures from Africa, the Americas, Asia and the Middle East. (WOST 32400)
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 32500 International Short Story

Class:3 Lab:0 Credit:3
Course concentrates on an international selection of stories from both the Eastern and Western Hemispheres. Students will read, discuss and write about stories from Asia, Africa, the Americas and the Middle East, among other places.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 32600 English Linguistics

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam, TransferIN
An introduction to the nature and structure of language, as well as the study of dialects, semantics, and history of the language.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 32700 English Language I: History Development

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
This course presents the basic facts of the historical development of the English language from its beginnings to the present. The major changes in the sounds of English, the growth of the lexicon, and the development of the grammatical system will be studied.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 33300 Renaissance English Literature

Class:3 Lab:0 Credit:3
Attributes: Literature
A survey of Renaissance literature in England through an intensive reading or representative works by such authors as Spenser, Jonson, and Donne (Shakespeare's plays not included.)
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 33500 Restoration and 18th Century English Literature

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research, Literature
A survey of Restoration and eighteenth-century literature through an intensive reading of representative works by such authors as Dryden, Pope, Swift and Johnson (the novel and the drama excluded for the most part.)
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 34000 Literature By Women Of Color

Class:3 Lab:0 Credit:3
Attributes: Literature
This course focuses on literature written in English by women of color living in the United States. Writers included are of African-American, Native-American, Asian-American, and Latino/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL 34000 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 35000 Survey Of American Literature From Its Beginnings To 1865

Class:3 Lab:0 Credit:3
Attributes: Literature, TransferIN
An introduction to American literature from the colonial period to the Civil War, emphasizing such major literary figures as Edward Taylor, Franklin, Poe, Hawthorne, Melville, Emerson, Thoreau, and Whitman. This course also treats significant minor writers in their relation to literary movements and ideas and includes the work of minority writers.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 35100 Survey Of American Literature From 1865 To The Post World

Class:3 Lab:0 Credit:3
Attributes: Literature, TransferIN
War II Period. A continuation of ENGL 35000, this course surveys American literature from the Civil War to recent times, emphasizing such major literary figures as Dickinson, Twain, James, Crane, Frost, T.S. Eliot, Fitzgerald, Hemingway, and Faulkner. The course also treats significant minor writers in their relation to literary movements and ideas and includes the work of minority writers.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 35500 African American Literature, Slavery to 1940

Class:3 Lab:0 Credit:3
Attributes: Literature

An examination of the literary, social, and historical significance of major works of fiction, drama, poetry, and non-fiction. The course begins during slavery, continues through the reconstruction and post-reconstruction periods, and finishes at the conclusion of the Harlem Renaissance. Readings will be explored, when appropriate, with attention to the influences of folklore and music.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 35600 American Humor

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam

Humorous writings of the nineteenth and twentieth centuries are studied as to form and technique and also as a reflection of American life.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 36300 African American Literature, Slavery 1940 to Present

Class:3 Lab:0 Credit:3

A continuation of ENGL 35500, this course surveys major works of fiction, poetry, drama, and non-fiction from the 1940s and 1950s, through the Black Arts Era of the 1960s and 1970s, and up to the present. Readings will be explored, when appropriate, with attention to the influence of folklore and music.

ENGL 37300 Science Fiction And Fantasy

Class:3 Lab:0 Credit:3
Attributes: Literature

Representative works of science fiction and fantasy examined in relation to both mainstream and popular literature. Emphasis is on technique, theme, and form.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 38100 The British Novel

Class:3 Lab:0 Credit:3
Attributes: Literature

A survey of representative British novels of the eighteenth and nineteenth centuries by such authors as Defoe, Fielding, Austen, Dickens, Eliot, and Hardy.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 38200 The American Novel

Class:3 Lab:0 Credit:3
Attributes: Literature

A survey of representative American novels of the nineteenth and twentieth centuries by such authors as Cooper, Twain, Hawthorne, Melville, James and Faulkner.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 38300 Modern Drama: Ibsen To The Absurdists

Class:3 Lab:0 Credit:3

A survey of major works of Continental, English, and American drama, including such authors as Ibsen, Chekhov, Shaw, O'Neill, and Beckett.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 38600 History Of Film To 1938

Class:2 Lab:3 Credit:3

A survey of the American and European cinema from its origin in technology and realism to the aesthetic implications presented by the coming of sound. Emphasis on the feature film and on the prevalent aesthetic attitudes in the first decades of the motion picture.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 38700 History Of The Film From 1938 To The Present

Class:2 Lab:1 Credit:3

A survey of international cinema for the period indicated. Emphasis on the feature film and its development as a communication tool, popular art form, and medium of personal expression.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 39100 Composition For English Teaching Majors

Class:3 Lab:0 Credit:3
Intensive practice in writing exposition and in annotating high school students' compositions.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 39600 Studies In Literature And Languages

Class:3 Lab:0-2 Credit:3
Attributes: Variable Title
A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 10000 with min grade of B-

ENGL 40000 Creative Non-Fiction

Class:3 Lab:0 Credit:3
Study of creative nonfiction sub-genres and techniques. Practice in the craft of short creative nonfiction writing. Workshop environment.
Prereqs: ENGL 31900 with min grade of C- OR ENGL 40500 with min grade of C-

ENGL 40300 Literary Theory

Class:3 Lab:0 Credit:3
This seminar addresses three major concerns in the study of literature: the problem and the possibility of theory; the problems of canon, form and genre; and the problems of meaning and significance.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- AND ENGL 20100 with min grade of D-

ENGL 40400 Web Page Design

Class:3 Lab:1 Credit:3
Provides students with a theoretical understanding of and practical training in developing Web sites. Students will learn the basics of HTML and working with Java and Javascript. Emphasis is on analyzing real-world contexts (e.g. promotional, informational, instructional) and users of Web sites while authoring texts that meet these needs.

ENGL 40600 Review Writing

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Intensive practice in the writing of book, film, and theatre criticism, as well as reviews of musical programs and art exhibits. Readings of critics to serve as possible models. Audience analysis of newspapers and periodicals that would be potential markets.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 41010 Virtual Worlds

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects, ExL-Undergraduate Research
This course provides students with an opportunity to live/ work for one semester as an avatar in a virtual world. During this time, students will become part of different in world communities. produce an ongoing research project that documents their experiences, and transform/ repurpose that experience into a 3-D virtual learning space. Additionally, students will acquire skills in building, scripting and creating machinima.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C OR ENGL 10800 with min grade of C

ENGL 41100 Studies in Major Authors

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A study of the literary critical or cinematic works of one or two influential authors or directors.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C-

AND ENGL 20100 with min grade of D-

ENGL 41101 Introduction to Writing In The Health Sciences

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
This course provides an introduction to four areas of writing in the health sciences: Patient education materials, pharmaceutical documentation, medical editing and medical journalism. This course will involve lectures, guest speakers, teamwork, and a real world project.
Prereqs: ENGL 10500 with min grade of C- OR ENGL 10800 with min grade of C-

ENGL 41200 Studies in Genre

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A study of literary or cinematic works that share distinctive formal features.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- AND ENGL 20100 with min grade of D-

ENGL 41300 Studies in History and Literature

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A study of literature or film produced during a particular well-defined historical period from the point of view of its social, political, religious, and economic contexts.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- AND ENGL 20100 with min grade of D-

ENGL 41400 Studies in Literature and Culture

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A study of literature or film from the perspective of the cultural norms and values it expresses, celebrates challenges, and imaginatively opposes.
Prereqs: (ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-) AND ENGL 20100 with min grade of D-

ENGL 41700 Peer Mentoring

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Practicum
Instruction on intercultural awareness, mentorship, leadership and education. Daily interaction with peer international students enrolled in the English Language Program.

ENGL 41800 Short Fiction Writing

Class:3 Lab:0 Credit:3
Study of short techniques and practices in the craft of short story literary fiction writing. Workshop environment.
Prereqs: ENGL 10000 with min grade of B- OR ENGL 10400 with min grade of C- OR ENGL 10800 with min grade of C- AND ENGL 31900 with min grade of C- OR ENGL 40500 with min grade of C-

ENGL 42000 Business Writing

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-English Comp, Gen Ed-Written Communication, General Education
Workplace writing in networked environments for management contexts. Emphasizes organizational context, project planning, document management, ethics, research, team writing. Typical genres include management memos, reports, letters, email, resumes (print and online), oral presentations.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 42300 Technical Publications Writing

Class:3 Lab:0 Credit:3
Designed to teach the student how to create software documentation, using contemporary management methods and the state-of-the-art capabilities of the personal computer.

Prereqs: ENGL 10500 with min grade of C- OR ENGL 10800 with min grade of C- OR ENGL 22000 with min grade of C-

ENGL 42501 Writing For New Media

Class:3 Lab:0 Credit:3

Course invites students to explore the emergence of "new" media (primarily online, interactive digital media) both in theory and in practical production terms as writers; students will examine how researchers define new media and experiment with repurposing traditional forms of print media to meet these challenges. Topics will include participatory culture, convergence theory, knowledge communities, transmedia production, among others.

ENGL 42600 Discourse Communities In Professional Writing

Class:3 Lab:0 Credit:3

Course examines business and technical writers as two separate, yet related, discourse communities and explores to what extent various influences, such as classical rhetoric, modern discourse theory, cognitive psychology, and organizational climate, may shape how members of these communities define, think about, and practice the art of writing. Class will explore how these theoretical approaches may account for interactions between writer, audience, text and subject matter.

Prereqs: ENGL 10400 with min grade of D-

ENGL 42700 Senior Writng Project

Class:3 Lab:0 Credit:3

Course consists of a research and writing project in professional writing. Such a project should be a culmination of student coursework in professional writing, including the internship or supervised writing. As determined by the instructor in consultation with the student, projects may be in technical writing, business or industrial report writing, technical or scientific journalism, or literary journalism. Individual conferences only; no class meetings.

Prereqs: ENGL 10400 with min grade of D- OR ENGL 10300 with min grade of D- OR ENGL 10800 with min grade of D-

ENGL 42800 Special Topics in Writing

Class:3 Lab:0 Credit:3

Attributes: Variable Title

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Sample topics may include writing in the medical field, writing and technology, or publicity and promotional writing.

ENGL 42900 Supervised Writing

Class:3 Lab:0 Credit:3

Special writing projects for students in the Writing Option. Individual conferences only; no class meeting.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 43100 Web Usability: Writing & Reading on the Web

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Design Projects

This course assists students in writing effective Web-based content and understanding how to make Web sites usable. Course examines how users interact with Web sites, how/when sites are successful, and how/when they are not. Students will learn how to write effective online content for the Web and Intranets/Extranets, understand usability issues, and conduct user testing of Web sites.

ENGL 43500 Topics in Writing for Interactive Digital Media

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Focuses on examining a specific topic related to writing for interactive digital media. Special topics include writing for Web-based shared or social media, such as blogs, wikis, and social networks, editing online content, or digital storytelling, among others. Specific attention paid to application and examples in the areas of education, business and entertainment.

Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 43600 Writing for Informational Interactive Media

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Design Projects
Provides an introduction to writing for informational interactive media. Material presented includes: the role of the interactive writer, thinking interactively, interactive structure, script format and the special challenges of presenting information interactively. We will study sample informational interactive programs and scripts including: e-learning, educational and reference CDs and DVDs, amd multimedia exhibits, among others. Students will create an original design proposal for an informational interactive application with flowchart, script and treatment.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 43700 Writing for Narrative Interactive Media

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Provides an introduction to writing for narrative interactive media. Materials presented include: the role of the interactive writer, thinking interactively, interactive structure, script format and the special challenges of presenting information interactively. We will study sample narrative interactive programs and scripts including computer/video games, simulations, and worlds, among others. Students will create an original design proposal for a narrative interactive application with flowchart, script, and treatment. Course also explores career opportunities in this field.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 44100 Chaucer's Canterbury Tales

Class:3 Lab:0 Credit:3
Critical reading of The Canterbury Tales in Middle English with attention to the literary and cultural backround.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 44200 Shakespeare

Class:3 Lab:0 Credit:3
Attributes: Literature
's dramatic craftsmanship, characterization, poetry, humor, psychology, and modern pertinence illustrated in representative tragedies, comedies, and history plays.
Prereqs: (ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-) AND ENGL 20100 with min grade of D-

ENGL 44400 Milton

Class:3 Lab:0 Credit:3
An in-depth study of 's works, including some of his early lyric poems, prose, and major works - Paradise Lost, Paradise Regained, and Samson Agonistes.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 45100 Feature Writing

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Examination of magazine staff organization, market analysis and editorial consent. Study of and practice in the writing of a variety of nonfiction materials. Emphasis is on the adaptation of topics and presentation of editorial policies and reader groups.
Prereqs: COM 25500 with min grade of D-

ENGL 45500 Main Currents Of American Thought

Class:3 Lab:0 Credit:3
Attributes: Literature
A survey of dominant ideas and intellectual trends in America from 1607 to the present as revealed through American literature and as related to American life and culture.
Prereqs: ENGL 10400 with min grade of D- OR ENGL 10300 with min grade of D- OR ENGL 10800 with min grade of D-

ENGL 46200 The Bible As Literature: The Old Testament

Class:3 Lab:0 Credit:3
Attributes: Literature
An analysis of the historical books of the Old Testament, other narratives, and the books of Psalms, Proverbs, and Job,

with emphasis on comprehension.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 46300 The Bible as Literature: The New Testament

Class:3 Lab:0 Credit:3
Attributes: Literature
A study of a large part of the New Testament, with emphasis on the continuity of religious ideas displayed in the Old and New Testaments.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 47900 The Short Story

Class:3 Lab:0 Credit:3
Attributes: Literature
An historical and critical study of nineteenth and twentieth century short stories: Irish, British, American, Continental.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10300 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 48000 Internship In Writing

Class:0 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship
(To gain admission to the internship, the student must have a 3.0 GPA in all courses in the writing focus or consent of the instructor. At least 21 hours of this coursework must be completed prior to the internship.) Assigned internships in business, industrial and other professional situations.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 49101 Special Topics English Language & Literature

Class:3 Lab:0 Credit:3
Each time the course is taught, it will focus on a topic that is not currently offered in the catalogue.
Prereqs: ENGL 20100 with min grade of C-

ENGL 49200 Literature in the Secondary Schools

Class:3 Lab:0 Credit:3
Exploration of the theory, research and pedagogy supporting the teaching of literature at the secondary level. Topics include text selection, instructional strategies, adolescent literacy, student engagement and the use of alternative texts.
Prereqs: ENGL 10400 with min grade of C- OR ENGL 10000 with min grade of B- OR ENGL 10800 with min grade of C-

ENGL 50100 Introduction To English Studies

Class:3 Lab:0 Credit:3
Introduction to graduate studies in English with special emphasis on research and reference tools, methods of bibliography, and the writing of scholarly papers.

ENGL 50200 Practicum In Teaching College Composition

Class:0 Lab:0 Credit:1
Attributes: Variable Title
Reading professional literature, preparing syllabi, evaluating student papers, leading discussion. Required of all teaching assistants in their initial semester.

ENGL 50400 Practicum In The Teaching Of English Composition I

Class:3 Lab:0 Credit:3
OFFERED AT CALUMET ONLY -- Prepares new Graduate Aides in the Department of English and Philosophy to teach Freshman English. Orients new Graduates Aides to issues in college and provides practice in applications of those issues. This course is not, however, a part of master's degree requirement.

ENGL 50600 Introduction To English And General Linguistics

Class:3 Lab:0 Credit:3
General study of language and linguistic theory with emphasis on English. Problems and methods in phonology, morphology, syntax, and semantics. Current techniques of linguistic analysis.

ENGL 50900

Class:3 Lab:0 Credit:3

ENGL 51000 History Of The English Language

Class:3 Lab:0 Credit:3

Introduction to theories of linguistic change and their application to the historical development of English from its beginnings.

Prereqs: ENGL 50600 with min grade of B- OR AUSL 53000 with min grade of B-

ENGL 51200 Modern English Grammar

Class:3 Lab:0 Credit:3

Introduction to English syntactic structure, syntactic argumentation, and syntactic theory. Emphasis on one current theory as primary theoretical framework, with other theories considered.

Prereqs: ENGL 50600 with min grade of B- OR AUSL 58000 with min grade of B-

ENGL 51600

Class:3 Lab:0 Credit:3

ENGL 51800 Teaching English as a Second Language Principles & Practice

Class:3 Lab:0 Credit:3

Studies of issues and principles in USL/EFL program development. Emphasis is on practical application of theory in a variety of English learning and teaching contexts in the US and abroad.

ENGL 52900 Language Study For Educators

Class:3 Lab:0 Credit:3

(EDCI 52600) Covers foundational knowledge in language and linguistics for teachers and educational researchers. Topics include structure and functions of language, language acquistion and development, language diversity, classroom discourse, language and media, and literacy-language arts curriculum. A foundation for work in Literacy and Language Education.

ENGL 53100 The Rise of the Novel

Class:3 Lab:0 Credit:3

A study of the history of the emergent novel genre as it developed in 18th-century Britain and/or America.

ENGL 53200 The English Novel In The Nineteenth Century

Class:3 Lab:0 Credit:3

A survey of fiction up to about 1900, including such novelists as Scott, Dickens, Thackeray, the Brontes, Eliot, and Meredith.

ENGL 53400 Seventeenth-Century Literature

Class:3 Lab:0 Credit:3

Nondramatic literature from 1603 to 1660. Particular emphasis upon such figures as Jonson, Donne, Marvell, and Herbert, with representative prose from Bacon, Browne, Burton, and others.

ENGL 53500 Restoration and Early Eighteenth Century Literature

Class:3 Lab:0 Credit:3

A survey of nondramatic literature from 1660 to 1744, from Clarendon through Thomson. Empasizes Bunyan, Dryden, Pope, and Swift.

ENGL 53700 English Drama To 1642

Class:3 Lab:0 Credit:3

A survey of the English drama from the beginning, through Marlowe and Jonson, to the closing of the theaters (excluding Shakespeare).

ENGL 54100 Studies in Chaucer's Canterbury Tales

Class:3 Lab:0 Credit:3

Critical reading of The Canterbury Tales and related works in Middle English, with attention to the literary and cultural background and to secondary studies.

ENGL 54200 Shakespeare's Dramatic Art

Class:3 Lab:0 Credit:3
Attributes: Literature
A study of the development of Shakespeare's comic art from the early comedies through the later comedies and tragicomedies. Ten to 12 plays will be read.

ENGL 54300 Shakespeare In Critical Perspective

Class:3 Lab:0 Credit:3
Attributes: Literature
A study of the early and mature tragedies, the English histories, and the Roman plays. Ten to 12 plays will be read.

ENGL 54400 Milton

Class:3 Lab:0 Credit:3
A study of 's poetry and prose, with particular emphasis on "Paradise Lost", and some attention to the social, political, and literary background.

ENGL 54700 The Romantic Movement In English Literature

Class:3 Lab:0 Credit:3
Principal writers of the Romantic movement (Burns to Keats), emphasizing Wordsworth; relation of the historical background to the thought and feeling of the writers concerned.

ENGL 54800 Victorian Literature

Class:3 Lab:0 Credit:3
A survey of English poetry and prose from about 1832 to 1880.

ENGL 54900 Late Victorian And Edwardian Literature

Class:3 Lab:0 Credit:3
A study of the rebellion against Victorian conventions which characterized the period from 1880 to 1910. Such movements as aestheticism, decadence, symbolism, and naturalism are examined in the works of Hardy, Yeats, Butler, Wilde, and others.

ENGL 55400 American Literary Culture, 1820-1860

Class:3 Lab:0 Credit:3
A survey of American literature from about 1820 to 1855, concluding with Melville.

ENGL 55800 The Rise Of Realism In American Literature

Class:3 Lab:0 Credit:3
A survey of American literature from about 1855 to 1900, beginning with Whitman and ending with James and the early naturalists.

ENGL 57800 Modern American Fiction

Class:3 Lab:0 Credit:3
Critical study of twentieth-century novels and short stories, mainly before World War II, by writers such as Anderson, Dreiser, Fitzgerald, Hemingway, Dos Passos, and Faulkner.

ENGL 57900 Modern British Fiction

Class:3 Lab:0 Credit:3
Critical study of twentieth-century novels and short stories by such writers as Conrad, Lawrence, and Forster. Special attention is given to James Joyce's Ulysses.

ENGL 58000 Theories Of Modernity And Postmodernity

Class:3 Lab:0 Credit:3
Exploration of theories and models of modernity and postmodernity, with emphasis on cultural and critical issues.

ENGL 58200 Adopting Composition Theory Into Practice, Northwest

Class:3 Lab:0 Credit:3
Indiana Writing Project Institute In-depth examination into various theories surronding the teaching of writing and the adoption of those theories to actual classroom practice.

ENGL 58501 Assessment Of Written Texts

Class:3 Lab:0 Credit:3

In-depth examination into the various theories surrounding the assessment of written texts, with an emphasis on student texts.

ENGL 58900 Directed Writing

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

Writing creative, popularly technical, biographical, historical, philosophical papers on subjects of the student's choice. Individual conferences only; no class meetings.

ENGL 59000 Directed Reading

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

Directs the reading of students with special interests. Guides students in profitable reading in subjects of their own choice. Individual conferences only; no class meetings.

ENGL 59100

Class:3 Lab:0 Credit:3

ENGL 59300 Contemporary British Fiction

Class:3 Lab:0 Credit:3

Critical study of the British novel since World War II. Survey of scholarship and criticism. Examinations and critical papers.

ENGL 59500 Contemporary American Fiction

Class:3 Lab:0 Credit:3

Study of fiction of the past two or three decades as it relates to American literary traditions and thought. Survey of scholarship and criticism. Examinations and critical papers.

ENGL 59600 Advanced Studies In Literature And Language

Class:2-3 Lab:0-3 Credit:3

Attributes: Variable Title

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Emphasis on critical analysis, scholarly techniques, and secondary materials.

ENGL 59700 Contemporary Black Feminist Literature

Class:3 Lab:0 Credit:3

An intense examination of recent literacy work by black women along with various critical theories constructed about black women's literature beginning with the premise that black feminism is a sign to be interrograted, a focus of contradictions.

ENGL 60200 Introduction To Literary Methods

Class:3 Lab:0 Credit:3

Introduction to the methods of literary study, including investigation of significant critical modes, bibliographic techniques, and research paper writing.

ENGL 60500 Computers In Language And Rhetoric

Class:3 Lab:0 Credit:3

Seminar that investigates how computers figure in contemporary theories of text making. Typical topics: critiques of technology, hypertext, cyberspace, computer- mediated communication, Internet, electronic writing, online research, pedagogy and publishing.

ENGL 60600 Seminar in Poetry Writing

Class:3 Lab:0 Credit:3

An advanced course in the writing of poetry. Workshop criticism. Study of the work of established writers.

ENGL 60900

Class:3 Lab:0 Credit:3

ENGL 67200 Seminar in Women's Literature and Feminist Theory

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A variable topic course investigating gender as a category of analysis. Intensive study of one or two women authors, of a particular genre or period, or of a critical issue relevant to women's literature and/or feminist theory.

ENGL 68000 Seminar in Rhetoric and Composition

Class:3 Lab:0 Credit:3
Attributes: Variable Title
A variable content course dealing with topics such as cultural studies and composition, medieval rhetoric, renaissance, rhetoric, literacy, historigraphics of rhetoric, qualititive studies and profession writing theory.
Prereqs: ENGL 59100 with min grade of D

ENGL 69100 Seminar In The English Language Arts

Class:3 Lab:0 Credit:3
Problems in the teaching of English: literature, language, rhetoric. Attention to recent scholarship and to its application in the public schools.

ENGL 69600 Seminar In Literature

Class:2-3 Lab:0-3 Credit:3
Attributes: Variable Title
Advanced study of special subjects.

ENGL 69800 Research MA/MFA Thesis

Class:1-18 Lab:0 Credit:1-18
Attributes: Variable Title

ENGR 11000

Class:1-3 Lab:0 Credit:1-3

ENGR 15100 Software Tools for Engineers

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
Introduction to MATLAB and engineering problem- solving, with MATLAB. Students will be introduced to arrays rational and logical operations, control flow of sequence, selection and repetition, function definition, 2-D and 3-D graphics, data analysis, Graphical-Used Interface (GUI) development, and Simulink.
Prereqs: MA 15900 with min grade of C- OR MA 15400 with min grade of C- OR APPL with a min test score of 085

ENGR 15200 Programming for Engineers

Class:2 Lab:2 Credit:3
Introductory C programming course. Students will be introduced to basic syntax, standard mathematics library, control structures, user-defined functions, arrays, pointers, structures, and file I/Os. Laboratory exercises will accelerate learning of fundamental materials through supervised practice.
Prereqs: ENGR 15100 with min grade of C-

ENGR 18600 First Year Seminar for Engineers

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Wellness Education, Gen Ed-Univ/Personal Resources, Gen Ed-Wellness, General Education
The course will provide the foundations for students enabling them to: learn to succeed, work together in teams, understand the field chosen for study and orient them to university life and environs.

ENGR 19000 Elementary Engineering Design

Class:1 Lab:3 Credit:2
An introduction to engineering design.
Prereqs: MA 15900 with min grade of C- OR MA 15400 with min grade of C- OR APPL with a min test score of 085

ENGR 19500 First-Year Engineering Topics

Class:1-3 Lab:0-6 Credit:1-3
Attributes: Variable Title
Topics vary

ENGR 22000 Introductory Engineering III

Class:1 Lab:0 Credit:1

Continuation of ENGR 16000. Further lectures on the engineering profession and a continuation of computer programming design and implementation. Emphasis on engineering applications.

Prereqs: ENGR 16000 with min grade of D-

ENGR 39200

Class:3 Lab:0 Credit:3

ENTR 10000 Introduction to Entrepreneurship

Class:3 Lab:0 Credit:3

Basic business skills are surveyed and case studies of successful entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for entrepreneurs.

ENTR 10100 Entrepreneurship In Arts & Design

Class:3 Lab:0 Credit:3

Basic business skills are surveyed and case studies of successful self-employed artists and entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunitites that exist for converting artistic & design skills into self-employment and entrepreneurship.

ENTR 25000 Opportunity Identification

Class:3 Lab:0 Credit:3

This course is for those who are seriously interested in starting a new business. Too many businesses are started on the basis of hunches, or trying to copy others. This course will prepare students to systematically search for and evaluate business opportunities that not only fit the prevailing economic environment, but also match the individual's needs and experiences.

Prereqs: ENTR 10000 with min grade of C-

ENTR 30000 Growing the Firm

Class:3 Lab:0 Credit:3

Emphasizes the strategic management of growth associated with a rapidly changing business. Focuses on the practical aspects of managing a growing business on a day-to-day basis. Practical application to 'intrapreneurship', such as growing a division or department within a larger organization.

Prereqs: ENTR 10000 with min grade of C OR MGMT 10100 with min grade of C

ENTR 30100 Introduction to Technical Entrepreneurship

Class:3 Lab:0 Credit:3

Basic business skills are surveyed and case studies of successful entrepreneurs in high-tech businesses and will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunitites that exist for promoting the growth of technical entrepreneurship.

ENTR 30200 Innovation & New Product Development

Class:3 Lab:0 Credit:3

Explores the very earliest states of firm and product development: the process of idea generation, evaluation, and development. In addition to idea generation, focus will be on identifying ideas and developing products that have the best chance of success in the marketplace.

Prereqs: ENTR 10000 with min grade of C

ENTR 30300 Raising Money

Class:3 Lab:0 Credit:3
For students interested in business start-up or management of a growing firm. Exposure to the principles, methods and tools used in financial planning, analysis, and control of the small business enterprise. Covers short-term financial planning and control, creation of pro forma financial statements, and business valuation techniques. Presents how and where to seek financing via a variety of debt and equity sources.
Prereqs: FIN 31000 with min grade of C OR MGMT 31000 with min grade of C

ENTR 31001 Launching A New Venture

Class:3 Lab:0 Credit:3
This course is for those interested in launching their own business. The course will focus on tying together all of the students' entrepreneurship education to date, including finance, marketing, management and operations, business planning, and many more core business classes so that students will be ready to launch their company before the end of the class.
Prereqs: ENTR 10000 with min grade of C

ENTR 40000 Small Business Consultant

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Student consultant teams are assigned to individual, local, client companies to look at, study, and analyze one or more of their existing business problems or challenges. Each consultant team, with the active involvement and help of the instructor, will conduct the consulting assignement and submit a final report by the end of the semester. Consulting teams will also make a live presentation to the client.
Prereqs: (MGMT 31000 with min grade of C OR BA 21000 with min grade of C) AND (MGMT 36000 with min grade of C OR BA 36100 with min grade of C) AND (MGMT 32400 with min grade of C OR MGMT 22400 with min grade of C OR BA 22400 with min grade of C) AND (OBHR 33000 with min grade of C OR BA 23000 with min grade of C)

ENTR 40100 Social Entrepreneurship

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
This is an experiential learning course designed to show students that entrepreneurship can be useful for community enrichment and not just direct generation of wealth. In the course, students will learn about various aspects of social entrepreneurship and undertake a project of their choice designed to improve the local community.
Prereqs: ENTR 10000 with min grade of C

ENTR 41000 Advanced Small Business Consulting

Class:3 Lab:0 Credit:3
Student consultant teams are assigned to individual, local, client companies to look at, study, and analyze one or more of their existing business problems or challenges. Each consultant team, with active involvement and help of the instructor, will conduct the consulting assignment and submit a final report by the end of the semester. Consulting teams will also make live presentations to the clients.
Prereqs: ENTR 40000 with min grade of C

ENTR 42000 Business Plan Development

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The components of a business plan are analyzed. The focus is on the research, preparation, and presentation of the plan in a critical environment. Major components are marketing analysis, financial calculations and the applications of sound managerial principles. Public and private resources are available to fund new start-ups, expansions, and acquisitions will be explored and proform statements will be constructed.
Prereqs: ENTR 10000 with min grade of C AND (BA 12000 with min grade of C OR MGMT 20000 with min grade of C)

ENTR 45000 Corporate Entrepreneurship

Class:3 Lab:0 Credit:3
This course acknowledges that enterepreneurial activities occur in multiple organizational settings, including in corporations. As a capstone course to the entrepreneurship program, will integrate all aspects of the entrepreneurial

process and help students learn how to lead an entrepreneurial enterprise.
Prereqs: ENTR 42000 with min grade of C

ENTR 49500 Internship in Entrepreneurship

Class:1-4 Lab:0 Credit:1-4
Attributes: Experiential Learning, ExL-Internship, Variable Title
A special course in selected area of management, designed to provide practical field experience under professional superviaion in selected situations.

ENTR 49900 Undergraduate Research in Entrepreneurship

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Students will work with a faculty member on a research pronect in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills.

EQU 10000 Introduction To Equine Management

Class:3 Lab:0 Credit:3
The course provides an introduction to the various facets of the equine industry and discusses their impact on state and national economies. Topics include but are not limited to equine sports and disciplines, career opportunities, national organizations and governing bodies, international equine operations and equine economics contributions.

EQU 20000 Software for Equine Operations

Class:3 Lab:0 Credit:3
Microsoft Office is used to create business newsletters and databases. Hands-on experience using various equine software packages and creation of a business web site.
Prereqs: MGMT 10200 with min grade of C-

EQU 22000 Global Perspective of Equine Industry

Class:3 Lab:0 Credit:3
A study of the global scope of the equine industry and the economic, political and social forces influencing growth. Attention will be given to the effects of changing political systems, regulation, taxation, exchange rates, global competition, demographics and other forces.

EQU 30000 Equine Internship

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship
Students will work in an equine management environment in an organized and supervised situation designed to provide experience and challenges in a management situation.
Prereqs: EQU 10000 with min grade of C-

EQU 32000 Equine Taxation

Class:3 Lab:0 Credit:3
The focus of the course is on federal income tax laws and their impact on the equine operations. Business and hobby issues will be addressed by analyzing cases applying the nine regulations and factors determining the issue. Also addressed are forms of business, methods of accounting, state and foreign taxes as they are forms of business, methods of accounting, state and foreign taxes as they affect equine operations.
Prereqs: EQU 22000 with min grade of C-

EQU 33000 Equine Staff Management

Class:3 Lab:0 Credit:3
Introduction to the organizational structure and human resources and people required for equine operations whether that be a horse show, breeding farm, race track, or horseman organization. Examples include the identification of a chain of command and the process of coordinating work. Topics that will be discussed include recruitment, selection, training and employee evaluation.
Prereqs: EQU 22000 with min grade of C-

EQU 34000 Equine Ethical Issues

Class:3 Lab:0 Credit:3

This course provides an introduction to ethical issues in the equine industry.

EQU 35000 Equine Event Operations

Class:3 Lab:0 Credit:3

Introduction to methods combining with budgeting, spreadsheets, risk analysis, and business plans to facilitate event operations. Equine industry related problem solving incorporating research techniques data collection, quantitative analysis and decision making.

EQU 37000 Equine Sales and Service Marketing

Class:3 Lab:0 Credit:3

Marketing principles applied to the equine industry. Emphasis on services marketing in equine businesses including application of of 4 P's to service, design and management of service processes, drafting a service environment and managing relationships and building loyalties.

Prereqs: BA 22400 with min grade of D- OR MGMT 32400 with min grade of D-

EQU 37200 Equine Evaluation

Class:3 Lab:0 Credit:3

This course presents concepts on equine evaluation and teaches students to apply selection criteria established by national breed associations for equine performance and value.

Prereqs: EQU 10000 with min grade of D

EQU 40000 Equine Legal Issues

Class:3 Lab:0 Credit:3

An introduction to the legal aspects of the equine industry, to include an overview of commercial transactions, such as public and private sales of horses, stallion syndicate agreements, stallion service contracts, training agreements, boarding contracts, and applications of UCC code to equine industry.

Prereqs: EQU 35000 with min grade of C-

EQU 41000 Equine Governance Structures

Class:3 Lab:0 Credit:3

This course discusses the role of international and national equine competition governance bodies, breed registry and association governance, and USDA governance role in the equine industry.

Prereqs: EQU 10000 with min grade of D

EQU 42000 Horse Racing and Gaming Systems

Class:3 Lab:0 Credit:3

The study of the economics of casino gaming lottery stems and pari-mutuel wagering. Emphasis will be placed on factors affecting wagering and gaming, including product pricing, quality, competition, profits, and marketing strategy.

EQU 44000 Equine Stable Management

Class:3 Lab:0 Credit:3

This course presents management practices essential for economic planning of equine stable operations. Students are provided with application examples and industry contacts.

EQU 45000 Equine Senior Project

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Design Projects

This course requires students to combining their experience in an internship with their coursework to produce a three-year business plan for an equine operation.

Prereqs: EQU 40000 with min grade of C-

EQU 48000 Horse Show Project Management

Class:3 Lab:0 Credit:3

This course covers basic project management skills applied to horse shows and includes scheduling, resource allocation, budgeting, and reporting to regulatory agencies.

Prereqs: EQU 35000 with min grade of C-

EQU 49000 Equine Special Topics

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Arrange with Instructor before enrolling. Investigation in a specific equine management field.

ET 10000 Introduction to Engineering Technology

Class:0 Lab:3 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Wellness Education, General Education
This course will introduce engineeing technology students to resources and skills that will help them to be successful in their studies and ultimately in their careers. This course will help students explore engineeing technology by introducing campus, regional and national resources such as professional societies in their chosen fields. It will also help students improve in areas important to becoming better students. These areas may include topics such as planning academic careers, mentoring, improving study skills, goal setting, and utilization of library resources. In addition, the courses will focus on specific introductory concepts important to engineering technology students such as using campus computer resources and the TAC of ABET outcomes.

ET 15100 Career Planning

Class:1-3 Lab:0 Credit:1-3
All technology students enrolled in this course investigate different types of careers in their field and the resources available to help begin a career. Invited industrial speakers will provide insight into current industry needs to help students focus on an appropriate career path. Extensive involvement with the Office of Career Services will help students connect with possible employers.

ET 25000 Industrial Practice I

Class:0 Lab:0 Credit:0
Attributes: Experiential Learning
Co-op work experience.

ET 25200 Internship Program II

Class:1-3 Lab:0 Credit:1-3
Attributes: Experiential Learning, ExL-Internship
A practicum designed to combine University study with work experience directly related to the student's plan of study.

ET 30000 Industrial Practice II

Class:0 Lab:0 Credit:0
Cooperative Education Experience

ET 35000 Industrial Practice III

Class:0 Lab:0 Credit:0
Cooperative Education Experience.

ET 35300 Internship Program III

Class:1-3 Lab:0 Credit:1-3
Attributes: Experiential Learning, ExL-Internship
A practicum designed to combine University study with work experience directly related to the student's plan of study.
Prereqs: ET 25200 with min grade of C-

ET 40000 Industrial Practice IV

Class:0 Lab:0 Credit:0
Cooperative Education Experience.

ET 45000 Industrial Practice V

Class:0 Lab:0 Credit:0
Cooperative Education Experience.

ET 45400 Internship Program IV

Class:1-3 Lab:0 Credit:1-3
Attributes: Experiential Learning, ExL-Internship
A practicum designed to combine University study with work experience directly related to the student's plan of study.
Prereqs: ET 35300 with min grade of C-

ET 49500 Senior Project Survey

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Students will consider several project and develop a topic for the following ET 49700 course. They will develop project scope, establish time schedules, and give a written and an oral report on their proposal.
Prereqs: OLS 33100 with min grade of D- AND IET 30800 with min grade of D-

ET 49700 Senior Project

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
directed work on individual projects for senior engineering technology students.
Prereqs: ET 49500 with min grade of D

ET 49900 Engineering Technology

Class:1-6 Lab: Credit:1-6
Attributes: Variable Title
Hours and subject matter to be arranged by staff. Course may be repeated for credit.

ETHN 10000 Introduction To Ethnic Studies

Class:3 Lab:0 Credit:3
The course provides students with general knowledge about racial and ethnic history, identity, and experience in the United States.

ETHN 20100 The Hispanic American Experience

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
Dimensions of the Hispanic American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course.

ETHN 20200 The African American Experience

Class:3 Lab:0 Credit:3
Dimensions of the African American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course.

ETHN 31300 African American Women Fiction

Class:3 Lab:0 Credit:3
This course examines fiction by African American women during the last century, emphasizing literary, cultural, and political aspects of the writing. The intersection of gender, race, class, and sexuality emerge as dominant issues within the fiction and the course as well. Both novels and short stories are explored.

ETHN 34000 Literature By Women Of Color

Class:3 Lab:0 Credit:3
Attributes: Literature
This course focuses on literature written in English by women of color living in the United States. Writers included are of African American, Native American, Asian American, and Latino/Hispanic descent. The course introduces students to the emerging body of writing by women of color, hightening awareness of these women's literary contributions. ETHN 34000 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures.

ETHN 39000 Topics In Ethnic Studies

Class:0-6 Lab:0 Credit:1-6

Attributes: Variable Title
Variable titles.

ETHN 47500 Ethnic Identity in Film

Class:3 Lab:0 Credit:3
Prerequisites: COM 21400 and Ethnic Studies 10000 explores the construction of American ethnicity in mainstream American films. By examining films that reflect a particular ethnic sensibility and created by an individual of that particular ethnicity, this course will explore ethnic values and traditions.
Prereqs: COM 21400 with min grade of D- OR ETHN 10000 with min grade of D-

FIN 21000 Principles of Finance

Class:3 Lab:0 Credit:3
Analysis of the basic problems a business will confront in the formation, financial operations, and termination of a business. Important financial issues including capital formation, utilizing capital markets, and investments will be covered as well as a general understanding of money and capital markets and monetary institutions.
Prereqs: (BA 12000 with min grade of C OR ACC 12000 with min grade of C) AND (MGMT 10100 with min grade of C OR BUSM 10100 with min grade of C) AND ECON 21000 with min grade of C

FIN 24000 Personal Financial Management

Class:3 Lab:0 Credit:3
Attributes: TransferIN
Lectures and case analysis of managing one's personal finances; includes budgeting, credit analysis, insurance, taxation, housing, estate planning, private and business investment. Not available for credit in Management concentrations. Credit will only be given for one of the following: ECON 24000, MGMT 24000 or MGMT 44200.

FIN 31000 Financial Management

Class:3 Lab:0 Credit:3
Management of the finacial affairs of the industrial enterprise. Working capital management, current assessment, capital budgeting, stock and bond valuation, and capital structure decisions.
Prereqs: (MGMT 20000 with min grade of C OR ACC 20000 with min grade of C) AND (MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C)

FIN 34000 Corporate Financial Problems

Class:3 Lab:0 Credit:3
Advanced topics in financial management of corporations, from the viewpoints of an internal financial officer. A continuation of FIN 31000 with additional depth and topic coverage emphasizing applications.
Prereqs: (MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C) AND (MGMT 31000 with min grade of C OR FIN 31000 with min grade of C)

FIN 41200 Financial Markets And Institutions

Class:3 Lab:0 Credit:3
Introduction to financial markets and management of financial institutions. Emphasis on determinants of interest rates, and measurment and management of financial risk. Concentration on management of depository firms such as banks and savings and loans.
Prereqs: (MGMT 31000 with min grade of C OR FIN 31000 with min grade of C) AND ECON 25200 with min grade of C

FIN 44000 Management of Financial Institutions

Class:3 Lab:0 Credit:3
Management and policy topics providing insight on the internal operating procedures, and problems of financial institutions. Principles of loans analysis and the role of financial institutions in the capital markets are studied with an emphasis on commercial bank management.
Prereqs: MGMT 31000 with min grade of C OR FIN 31000 with min grade of C

FIN 44100 Futures And Options

Class:3 Lab:0 Credit:3
Characteristics of futures and options and their relationship to stocks, bonds, and other financial assets. The determination of futures and option prices and how they are used for hedging and immunization processes.

Prereqs: MGMT 31000 with min grade of C OR FIN 31000 with min grade of C

FIN 44200 Personal Finance

Class:3 Lab:0 Credit:3

Lectures and discussion on problems of managing one's personal finances. Covers budgeting; use of and cost of credit; life and property insurance; income and estate taxation; housing; wills, trusts and estate planning; saving and investments. Not available for credit towards economics and business economics concentrations. Credit only for one of the following: ECON 24000, MGMT 24000 MGMT 44200, FIN 24000 or FIN 44200.

FIN 44300 Fundamentals of Investments

Class:3 Lab:0 Credit:3

Operations of the markets in which securities are traded, and investments alternatives are studied. Theory and application of security valuation and portfolio selection techniques are examined with emphasis upon evaluation of investment performance.

Prereqs: MGMT 31000 with min grade of C OR FIN 31000 with min grade of C

FIN 44400 Investment Managment

Class:3 Lab:0 Credit:3

Treatment of problems of portfolio analysis, securities investment selection, and capital markets. Theoretical development, as well as quantitative and practical applications, as the level of the individual decision-maker.

Prereqs: MGMT 44300 with min grade of C OR FIN 44300 with min grade of C

FIN 44700 Derivatives

Class:3 Lab:0 Credit:3

Overview of derivative contracts and their relationship to stocks, bonds and other tradeable assets. Also, a description of risk and risk management. Special topics include forward, futures, options, swaps, and related contingent claims contracts. The determination of their theoretical prices as well as their application in hedging and portfolio immunization.

Prereqs: MGMT 44300 with min grade of C OR FIN 44300 with min grade of C

FIN 44800 Real Estate Principles

Class:3 Lab:0 Credit:3

This course focuses on the key aspects of negotiation, acquistion, and financing of real estate. Other topics include amortization, restoration, management and depreciation of real estate assets.

Prereqs: MGMT 31000 with min grade of C OR FIN 31000 with min grade of C

FIN 44900 International Financial Management

Class:3 Lab:0 Credit:3

A study of the financial management of the international operations of the business. The course develops the international financial environment within which the multinational firm operations. Instruments such as currency forward, futures, and operations contracts available for the firm to manage additional risk associated with international operations.

Prereqs: (MGMT 31000 with min grade of C OR FIN 31000 with min grade of C) AND ECON 25200 with min grade of C

FIN 49500 Internship in Finance

Class:0 Lab:0 Credit:0-4

Attributes: Experiential Learning, ExL-Internship, Variable Title

A special course in selected areas of finance, designed to provide practical field expereince under professional supervision in selected situations related to the student;s area of specialization.

FIN 49900 Undergraduate Research in Finance

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title

Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involoved proper IRB clearance will be obtained in advance.

FLL 10300 Freshman Experience Worldviews

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
This course would include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline specific career exploration and critical thinking relative to the study of foreign languages and literature.

FLL 19000 Special Topics

Class:3 Lab:0-4 Credit:3
Attributes: Variable Title
Special topics related to world languages, cultures and literatures. Variable title. This course may be repeated for credit, providing the topic is different.

FLL 20300 French Cinema - Introduction to Film Study

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
The course is based on close readings of individual films. We will look at the concept of film analysis and the relationship between films, politics, and society. The written assignments are designed to develop students' writing skills in English and their ability to engage and to lead discussions on assigned topics. Course taught in English and open to all students.

FLL 20700

Class:3 Lab:0 Credit:3

FLL 29000 Special Topics

Class:3 Lab:0 Credit:3
Attributes: Variable Title
Special topics related to world languages, cultures, and literature. Variable title. This course may be repeated for credit, providing topics are different.

FLL 39000 Special Topics

Class:0-4 Lab:0-4 Credit:1-4
Attributes: Variable Title
Special topics related to world languages, cultures, and literatures. Variable title. This course may be repeated for credit, providing topics are different.

FLL 46400 Comparative Study Of Modern Languages

Class:3 Lab:0 Credit:3
An examination of French, German and Spanish phonology, syntax and morphology. Representative presentations of historical and contemporary descriptive considerations of these languages.

FLL 49000 Special Topics

Class:0-4 Lab:0-4 Credit:1-4
Attributes: Variable Title
Special topics related to world languages, culture, and literatures. Variable title. This course may be repeated for credit, providing topics are different.

FM 10000 Individualized Wellness Strategies

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, General Education
This course is repeatable for credit. The course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 10100 Cardiovascular Exercise Machines

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 10200 Weight Training

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status,and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 10300 Walking/Jogging

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 10400 Physical Fitness

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 10500 Yoga

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 10600 Racquetball

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 10700 Basic Self Defense

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 11200 Aikido

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 11300 Tai Chi

Class:0 Lab:2 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course is repeatable for credit. This course will provide students with a working knowledge of healthy living

practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 11400 Pilates

Class:0 Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 11600 Wing Chun

Class:0 Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices an assessment of the students' present fitness status and an opportunity to choose a physical activity as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 11700 Latin Ballroom Dance Partner

Class:0 Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course is an introduction to dance partnering techniques in Latin dance. It is an exercise class to facilitate the development of proper style and understanding of ballroom/Latin dance partnering movements and techniques while providing aerobic benefit. This course also provides students with a working knowledge of healthy living practices, and assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life.

FM 11701 Latin Ballroom Dance Exercise

Class:0 Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course is an introduction to ballroom techniques in Latin dance. It is an exercise class to facilitate the development of proper style and understanding of ballroom/Latin dance movements and techniques while providing aerobic benefit. This course also provides students with a working knowledge of healthy living practices, an assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life.

FM 11702 Advanced Weight Training

Class: Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course follows FM 10200. Weight Training, and is an advanced physical activity class designed to instruct students in advanced weight training principles and techniques. This course also provides students with a working knowledge of healthy living practices, an assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life.

FM 11703 Jiu Jitsu

Class:0 Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course provides instruction and practice of this martial art and combat sport that focuses on grappling and ground fighting, achieving a dominant position, and application of submission techniques. This course also provides student with a working knowledge of healthy living practices, an assessment of students present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life.

FM 11704 Zumba

Class:0 Lab:2 Credit:1

Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education

This course is an introduction to , a Latin-inspired dance fitness class that incorporates Latin and international music and dance movements. It is an exercise class to facilitate the students' development of a dynamic, exciting and effective fitness system which provides aerobic benefits. This couse also provides students with a working knowledge of healthy living practices, an assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed through life.

FM 21900 Issues and Problems in Health

Class:3 Lab:0 Credit:3

Designed to acquaint students with various aspects of personal and community health problems. Emphasis will be on current health issues such as pollution, mental health, venereal disease, aging, medical care, etc.

FM 25000 Principles of Adult Fitness

Class:2 Lab:2 Credit:3

The purpose of this course is to expose students to the effects of exercise on health over the life course. The health benefits of different types of exercise will be reviewed. Students will have the opportunity to utilize fitness equipment and develop their own exercise plans. Existing community programs and resources will be discussed.

FM 26800 Physiology of Exercise

Class:2 Lab:2 Credit:3

Physiological concepts and principles underlying human responses and adaptations to exercise. Selected methods and techniques of assessing physiological function and evaluating performance in physical efforts in a laboratory setting.

Prereqs: CHM 11900 with min grade of D AND BIOL 21400 with min grade of D

FM 28000 Principles of First Aid

Class:1 Lab:2 Credit:2

Attributes: TransferIN

A course designed to instruct students in the immediate and temporary care given victims of an accident or illness. Covers dressings, bandaging, CPR, lacerations, insect and animal bites and other first aid topics. Certification Included.

FM 30000 Practicum in Health, Fitness and Nutrition

Class:1 Lab:4 Credit:3

Attributes: Experiential Learning, ExL-Practicum, Malpractice Fitness Management

Prerequisite: Limited to students enrolled in Nutrition, Fitness & Health degree. Classification 4 or higher. Clinical field experience of at least 300 hours in an approved health, fitness, and/or nutrition facility under the direction of a certified or registered instructor. The on-campus Total Fitness Center and their degreed/ professional staff is the primary site for this practicum.

Prereqs: FN 30300 with min grade of C OR FM 31500 with min grade of C AND FM 26800 with min grade of C

FM 30100 Recreation Leadership

Class:3 Lab:0 Credit:3

Provides instruction in various aspects of recreation. Community, school, camping, travel and leisure time activities will be part of the instruction. Identification of the principles of recreation and the many organizations promoting recreational activities are included.

FM 30200 Anatomy and Kinesiology

Class:3 Lab:0 Credit:3

Overview of human body structures and functions appropriate for exercise science. Emphasis on musculoskeletal and neuromuscular systems as they relate to human movement.

Prereqs: BIOL 21300 with min grade of D- AND BIOL 21400 with min grade of D-

FM 30500 Practicum In Fitness Management

Class:1 Lab:4 Credit:3

Attributes: Experiential Learning, ExL-Practicum, Malpractice Fitness Management

Prerequisites: Limited to students enrolled in the Fitness Management degree, Classification 8. Advanced level clinical field experience in fitness management facility. At least 300 hours in an approved health and/or nutrition facility under the direction of a certified or registered instructor. An off-campus facility or club and their managerial/professional staff is the primary site for this practicum.

Prereqs: FM 30000 with min grade of C AND FM 41000 with min grade of C AND FM 47400 with min grade of C

FM 31300 Beginning Concepts of Personal Training

Class:1 Lab:2 Credit:2
This course is designed to give the students the knowledge and understanding necessary to prepare for the ACE Personal Trainer Certification Exam and become personal trainers. This course presents the ACE Integrated Fitness Training (ACE-IFT) Model as a comprehensive system for designing individualized programs based on each client's unique health, fitness and goals. The information covered by this couse and the ACE-IFT Model will help students learn how to facilitate rapport, adherence, self-efficacy and behavior changes in clients, as well as design programs that help clients to improve posture, movement, flexibility, balance, core function, cardiorespiratory fitness, and muscular endurance and strength.
Prereqs: FM 26800 with min grade of C AND FM 30200 with min grade of C

FM 31400 Beginning Concepts of Group Exercise

Class:1 Lab:2 Credit:2
This course is designed to provide theoretical knowledge and practical skills in preparation for the ACE Group Fitness Instructor Certification Exam. Topics include guidelines for instruction: safe, effective and purposeful exercise, essentials of the instructor-participant relationship, the principles of motivation to encourage adherence in the group fitness setting, effective instructor-to-participant communication techniques, use of music and music selection, methods for enhancing group leadership, and the group fitness instructor's professional role.
Prereqs: FM 26800 with min grade of C AND FM 30200 with min grade of C

FM 32000 Physical Growth Throughout the Life Span

Class:2 Lab:0 Credit:2
Designed to acquaint fitness and health professionals with the physical growth and development of individuals throughout the life span. Includes factors relating to movement, behavior, learning, motor skills, and nutrition.
Prereqs: FM 26800 with min grade of C AND FM 30200 with min grade of C

FM 37500 Sport-Related Tourism and Leisure Management

Class:3 Lab:0 Credit:3
NOT OPEN TO STUDENTS WITH CREDIT IN HTM 375 Integration of Sport and Tourism disciplines. Sport participation and spectator travel, hard and soft adventure tourism, and management of leisure time are emphasized. Focus on the dynamics behind the explosion in Sport and Adventure Tourism.

FM 39000 Undergraduate Special Problems

Class:0-6 Lab:0-4 Credit:0-6
Attributes: Variable Title
Optional lab 2-4. Repeatable to a maximum of 6 credits. Credit and Hours arranged. Open to Fitness Majors only or by consent of Instructor. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas of the field of fitness management.

FM 41000 Evaluation, Testing and Assessment of Exercise

Class:2 Lab:2 Credit:3
Instruction and laboratory experience in the scientific evaluation, testing and assessment of exercise. Includes data collection, analysis and statistical applications. Oriented toward interpreting test data and applying it toward the design of individual exercise programs.
Prereqs: FM 26800 with min grade of C AND FM 30000 with min grade of C AND FM 30200 with min grade of C

FM 47400 Physiology of Exercise II

Class:1 Lab:2 Credit:2
Advanced level exercise physiology course exploring physiological concepts and principles assessing physiological function and evaluating performance in physical efforts in a laboratory setting. Includes integration of metabolic, cardiovascular, respiratory, endocrinological and biochemical functions of the human body in response to exercise.
Prereqs: FM 26800 with min grade of C AND FM 30200 with min grade of C AND FM 41000 with min grade of C

FN 10500 Nutrition in the 21st Century

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
Analysis of current nutrition controversies and food safety concerns. This course does not satisfy the Nutrition

competency for Nursing or HTM majors.

FN 12000 Nutrition for a Healthy Lifestyle

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
Basic understanding of nutrition guidelines and lifestyle risk factors related to diet. Assessment of the individual's diet and related behaviors. Solutions to every day nutrition problems that lead to lifestyle enhancements are presented. This course does not meet nutrition competency requirement for Nursing, Early Childhood Education or HTM majors.

FN 12100 Vegetarian Nutrition

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
COURSE DOES NOT MEET NUTRITION COMPETENCY REQUIREMENT FOR NURSING, EARLY CHILDHOOD EDUCATION OR HOSPITALITY AND TOURISM MANAGEMENT MAJORS. Issues to review when considering adoption of a Vegetarian Diet. Nutrition guidelines and risk factors related to vegetarianism are addressed. Various types of vegetarian diets and the benefits/risks each pose are discussed.

FN 20300 Foods: Their Selection And Preparation

Class:2 Lab:3 Credit:3
Principles of food selection, preparation, and meal planning.

FN 20500 Food Science I

Class:1 Lab:5 Credit:3
Chemical and physical composition of foods: their changes during processing, storage and preparation.
Prereqs: CHM 11100 with min grade of C- OR CHM 11200 with min grade of C-

FN 20800 Nutrition in Women's Health

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
(Course does not meet nutrition competency requirements for Nursing, Early Childhood Education, or Hospitality and Tourism Management Majors. Not open to students with credit in WOST 20800.) Exploration of women's health issues with emphasis on Nutrition. Review of current research in normal and preventative nutrition throughout the life cycle. Focus on women as individuals and on those who counsel and educate women.

FN 26000 Nutrition For Early Childhood Educators

Class:3 Lab:0 Credit:3
(This course does not satisfy the nutrition competency for Nursing or HTM majors.) Study of the basic principles of food and nutrition from pregnancy through the primary years and methods to achieve good nutritional status. Special emphasis on nutrition education, legislation, and regulation in pre-school and elementary classrooms (Grades K-3).

FN 26100 Nutrition For Health, Fitness, And Sports

Class:2 Lab:2 Credit:3
(This course does not satisfy the Nutrition competency for Nursing or HTM majors.) Study of the relationship between physical fitness/sports activity and nutrition resulting in optimum health. Special emphasis on nutritional demands during exercise or sports activities. Laboratory experience in the Fitness Center required.

FN 30300 Essentials of Nutrition

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education, TransferIN
Basic nutrition and its application in meeting nutritional needs of all ages.

FN 31500 Fundamentals Of Nutrition

Class:3 Lab:0 Credit:3
Basic principles of nutrition and their applications in meeting nutritional needs during the life cycle.
Prereqs: CHM 25100 with min grade of C- AND CHM 25200 with min grade of C- AND BIOL 21400 with min grade of C-

FN 32200 Community Nutrition & Health Promotion Entrepreneurship

Class:2 Lab:0 Credit:2

Study of strategies for improving nutritional status and community health. Examination of principles of entrepreneurship and application to the practice of community nutrition. Includes reviews of existing federal and non-governmental programs designed to meet food and nutrition needs of various population groups.
Prereqs: FN 30300 with min grade of C OR FN 26000 with min grade of C

FN 33000 Diet Selection and Planning

Class:3 Lab:0 Credit:3
Diet selection for health maintenance in culturally diverse populations based on current dietary guides with utilization of the computer for diet evaluation.
Prereqs: (FN 20300 with min grade of C- OR FN 20500 with min grade of C-) AND (FN 30300 with min grade of C- OR FN 31500 with min grade of C-)

FN 36000 Nutrition For The Aging

Class:3 Lab:0 Credit:3
(This course does not satisfy the Nutrition competency for Nursing or HTM majors.) Nutritional needs and problems of the aging. Includes a review of community and institutional nutrition and food programs. Emphasis on the aging and their environment. Participation in community activities for the aging may be required.
Prereqs: FN 30300 with min grade of C

FN 39000 Independent Undergraduate Research

Class:1-3 Lab:1-3 Credit:1-3
(Repeatable to a maximum of 6 credits. Credit and hours arranged. Prerequisites: Classification 5 and consent of instructor.) Individual research projects undertaken with faculty supervision and covering various aspects of nutrition.

FN 59000 Special Problems In Nutrition

Class:0 Lab:0 Credit:1-4
Attributes: Variable Title
Credit and hours to be arranged. Prerequisite: Admission by consent of Instructor. Individual problems dealing with various aspects of nutrition.

FNR 10300

Class:3 Lab:0 Credit:3

FNR 22500 Dendrology

Class:3 Lab:3 Credit:4
Field identification, taxonomy, and ecological characteristics of trees, shrubs, and herbs found in forests prairies, old fields, and wetlands.
Prereqs: BIOL 11000 with min grade of D

FR 10100 French Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1, TransferIN
Introduction to French.

FR 10200 French Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2, TransferIN
Continuation of FR 10100.
Prereqs: FR 10100 with min grade of C-

FR 19000 Special Topics in French

Class:0-3 Lab:0-6 Credit:1-3
Attributes: Variable Title
Special topics related to French and to francophone cultures and literatures. Variable title This course may be repeated for credit, providing topics are different.

FR 20100 French Level III

Class:3 Lab:1 Credit:3

Attributes: Foreign Language 3, TransferIN
A conversational approach to the culture of France with a review of French language skills as needed.
Prereqs: FR 10200 with min grade of C-

FR 20200 French Level IV

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 4, TransferIN
Continuation of FR 20100 and the presentation of intellectual readings.
Prereqs: FR 20100 with min grade of C-

FR 23000 French Literature in Translation

Class:3 Lab:0 Credit:3
Attributes: Literature, Variable Title
Reading and analysis of major French writers of the modern period with particular emphasis on the evolution of literary genres in relation to cultural, political, and social trends. Knowledge of French not required.

FR 26100 French Composition

Class:3 Lab:0 Credit:3
The essentials of French grammar as applied in composition.
Prereqs: FR 20200 with min grade of D-

FR 29000 Special Topics in French

Class:0-3 Lab:0-6 Credit:1-3
Attributes: Variable Title
Special topics related to French and to francophone cultures and literatures. Variable title. This course may be repeated for credit, providing the topics are different.

FR 30700 Commercial French

Class:3 Lab:0 Credit:3
This course will provide students with the fundamentals of effective expression and communication as these apply to French business situations. It will concentrate on commercial vocabulary, reading, writing and speaking as related to international business.
Prereqs: FR 20200 with min grade of D-

FR 33000

Class:2 Lab:2 Credit:3

FR 35000 History And Culture Of French Cuisines

Class:3 Lab:0 Credit:3
(In English) This is a study of the historical and cultural development of French cuisine as it evolved to its present status.

FR 36500 French Conversation

Class:3 Lab:0 Credit:3
Intensive practice in French conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Introduction to basic phonetics and practice in pronunciation.
Prereqs: FR 20200 with min grade of D-

FR 39000 Special Topics in French

Class:0-3 Lab:0-6 Credit:1-3
Attributes: Variable Title
Special topics related to French and to francophone cultures and literatures. Variable title. This course may be repeated for credit, providing topics are different.

FR 40500 Introduction To French Literature I

Class:3 Lab:0 Credit:3
Attributes: Literature
Introduction to the periods of French literature from the beginning through the eighteenth century. Reading and

discussion of representative works. The rudiments of literary criticism.
Prereqs: FR 20200 with min grade of D-

FR 40600 Introduction To French Literature II

Class:3 Lab:0 Credit:3
Attributes: Literature
Introduction to the periods of French literature from the late eighteenth century to the present time. Reading and discussion of representative works. The rudiments of literary criticism.
Prereqs: FR 20200 with min grade of D-

FR 40800 Language Practicum In Business

Class:0 Lab:0 Credit:3
The course will consist of on-the-job experience in international corporations, industry, commerce, government, or health and social agencies where French is used. The course is designed to expose students to their chosen vocational field.
Prereqs: FR 26100 with min grade of B- AND FR 30700 with min grade of B- AND FR 36500 with min grade of B-

FR 45000 French Civilization

Class:3 Lab:0 Credit:3
The study of modern French life with emphasis on the customs and daily life of the people. Lectures in the language.

FR 46100 Intermediate French Composition

Class:3 Lab:0 Credit:3
A continuation of FR 26100. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary.
Prereqs: FR 26100 with min grade of D-

FR 46500 Intermediate French Conversation

Class:3 Lab:0 Credit:3
Continued and more advanced practice in French conversation and study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary French culture as a basis for their conversations.
Prereqs: FR 36500 with min grade of D-

FR 49000 Topics In French

Class:3 Lab:0 Credit:3
Attributes: Variable Title
Variable title.
Prereqs: FR 20200 with min grade of D-

FR 51100 Advanced French Conversation

Class:3 Lab:0 Credit:3
Additional practice in speaking and understanding French. Talks based on material given in class.
Prereqs: FR 46500 with min grade of B-

FR 51500 Advanced French Composition

Class:3 Lab:0 Credit:3
Additional training in writing French.
Prereqs: FR 26100 with min grade of B-

FR 54100

Class:3 Lab:0 Credit:3

FR 54200 The Classical Age

Class:3 Lab:0 Credit:3
The social background and the formation of classical traits of seventeenth century in France. Readings from Corneille, Racine, Moliere and minor authors.
Prereqs: FR 40500 with min grade of B-

FR 55800 French Novel Of The Twentieth Century

Class:3 Lab:1 Credit:3
Contemporary novel as an insight into twentieth-century French life. Analysis of works by selected authors.
Prereqs: FR 40600 with min grade of B-

FR 58100 French Culture

Class:3 Lab:0 Credit:3
Development of the cultural life of the French people as reflected in architecture, art, history, literature, music, and philosophy. Lectures in French.

FR 59000 Directed Reading In French

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Admission by consent of the chairperson for French courses. May be repeated for credit.

GEOG 30500 American History To 1877

Class:3 Lab:0 Credit:3
This class addresses general topics in the discipline of Geography. It seeks to educate students so that they can consider the spatial dimensions of historical, political, economic, and social themes and problems. In addition, the course seeks to develop the general skills of the discipline especially those related to catography. Students receiving credit for this as a GEOG class may not also receive credit as HIST class and visa versa.
Prereqs: EAS 11000 with min grade of D- OR EAS 22000 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

GER 10100 German Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1
Introduction to German.

GER 10200 German Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2
Continuation of GER 10100.
Prereqs: GER 10100 with min grade of C-

GER 20100 German Level III

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 3
A conversational approach to the culture of Germany with a review of German language skills as needed.
Prereqs: GER 10200 with min grade of C-

GER 20200 German Level IV

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 4
A continuation of GER 20100 and the presentation of intellectual readings.
Prereqs: GER 20100 with min grade of C-

GER 23000 German Literature In Translation

Class:3 Lab:0 Credit:3
Attributes: Literature, Variable Title
Reading and analysis of selected German writers and their works with particular emphasis on the social, political, and intellectual climate of the times. The course content will change from semester to semester. Knowledge of German not required.

GER 26100 German Composition

Class:3 Lab:0 Credit:3
The essentials of German grammar as applied in composition.

Prereqs: GER 20200 with min grade of D-

GER 30700 Commercial German

Class:3 Lab:0 Credit:3

This course will provide students with the fundamentals of effective expression and communication as these apply to German business situations in particular. It will concentrate on commercial vocabulary, reading, writing, and speaking as related to international business.

Prereqs: GER 20200 with min grade of D-

GER 33000

Class:2 Lab:2 Credit:3

GER 36500 German Conversation

Class:3 Lab:0 Credit:3

(May be taken concurrently with GER 20200 with instructor approval.) Intensive practice in German conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Introduction to basic phonetics and practice in pronunciation.

Prereqs: GER 20200 with min grade of D-

GER 40500 Introduction To German Literature I

Class:3 Lab:0 Credit:3

Attributes: Literature

Survey of German literature from the beginning through the eighteenth century. Reading and discussion of representative works and the fundamentals of literary criticism.

Prereqs: GER 20200 with min grade of D-

GER 40600 Introduction To German Literature II

Class:3 Lab:0 Credit:3

Attributes: Literature

A continuation of GER 40500 covering the basic German literature survey from the eighteenth century to the present time.

Prereqs: GER 20200 with min grade of D-

GER 40800 Language Practicum In Business

Class:0 Lab:0 Credit:3

The course will consist of actual on-the-job experience in international corporations, industry, commerce or government where German is used. The course is designed to expose students to their chosen vocational field.

Prereqs: GER 26100 with min grade of D- AND GER 30700 with min grade of D- AND GER 36500 with min grade of D-

GER 45000 German Civilization

Class:3 Lab:0 Credit:3

The study of modern German life with emphasis on the customs and daily life of the people. Lectures in the language.

Prereqs: GER 20200 with min grade of D-

GER 46100 Intermediate German Composition

Class:3 Lab:0 Credit:3

A continuation of GER 26100. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary.

Prereqs: GER 26100 with min grade of D-

GER 46500 Intermediate German Conversation

Class:3 Lab:0 Credit:3

Continued and more advanced practice in German conversation and the study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary German culture as a basis for their conversations.

Prereqs: GER 36500 with min grade of D-

GER 49000 Topics In German

Class:3 Lab:0 Credit:3
Attributes: Variable Title
Variable title. (May be repeated for credit.)
Prereqs: GER 20200 with min grade of D-

GER 54200

Class:3 Lab:0 Credit:3

GER 54300

Class:3 Lab:0 Credit:3

GER 54400

Class:3 Lab:0 Credit:3

GER 54500 German Prose From Naturalism To The Present

Class:3 Lab:0 Credit:3
Development of the novel and short story of the period with special emphasis on the major authors.
Prereqs: GER 40600 with min grade of B-

GER 54600 German Literature Since 1945

Class:3 Lab:0 Credit:3
Major literary movements and tendencies in Germany, Austria, and Switzerland since 1945. Involves the close reading of literary texts, investigation of major problems addressed by literary criticism, and discussion of historical context.
Prereqs: GER 40600 with min grade of B-

GER 55400 German Drama Before Naturalism

Class:3 Lab:0 Credit:3
German drama from its beginning up to the advent of Naturalism. A study of the most significant German dramatists of the 19th century and earlier periods.

GER 55500 German Drama From Naturalism To The Present

Class:3 Lab:0 Credit:3
Development of the drama through the various literary movements of the period, including consideration of the underlying social and ideological forces.
Prereqs: GER 40600 with min grade of B-

GER 55600 The German Novelle

Class:3 Lab:0 Credit:3
A survey of the development of the Novelle, a literary genre which presents Germany's unique contribution to the European literature of the nineteenth century.
Prereqs: GER 40600 with min grade of B-

GER 58100 German Culture

Class:3 Lab:0 Credit:3
The development of the cultural life in German-speaking lands as reflected in architecture, art, history, literature, music, and philosophy. Lectures in German.

GER 59000 Directed Reading In German

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
(May be repeated for credit)

GNS 10300 Introduction To Higher Education

Class:3 Lab:0 Credit:3
Attributes: Keep Room Assignment
Designed to assist and guide students in maximizing their potential for success at the university by promoting academic growth. This course will emphasize utilization of campus resources, goal setting, values exploration, the relationship of academic planning to life goals, career exploration, and critical thinking strategies. This course is required of all students

in the Developmental Studies Program, except those with credit in GNS 29000 or EDPS 10300.

GNS 16000 Introduction To Chemistry

Class:2-3 Lab:3 Credit:3

A survey of modern chemistry using everyday examples and contemporary experiments to illustrate the general theories and unifying concepts. The subject matter is so widely diversified that those desiring to continue will be prepared to successfully complete chemistry courses required for careers in health, agriculture, industry, energy, transportation, conservation, or other fields.

GNS 29000 Topics For Study

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

A variable credit, variable title course for either group or individual study.

GRAD 59000 Special Topics

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Hours and credit to be arranged.

GREK 10100 Modern Greek Level I

Class:3 Lab:1 Credit:3

Attributes: Foreign Language 1

Introduction to the grammar of Attic Greek of the Classical period, and first forays into the reading of connected prose. Emphasis on accidence, syntax, and vocabulary building.

GREK 10200 Greek Level II

Class:3 Lab:1 Credit:3

Attributes: Foreign Language 2

Continuation of the study of Attic Greek grammar and reading of connected prose of the Classical period.

Prereqs: GREK 10100 with min grade of D-

GS 10200

Class:3 Lab:0 Credit:3

GS 12100

Class:3 Lab:0 Credit:3

GS 15000

Class:3-4 Lab:0 Credit:3

GS 26500

Class:3 Lab:0 Credit:3

GS 48000

Class:3 Lab:0 Credit:3

GS 49000

Class:0-4 Lab:0 Credit:1-4

HDFS 10100 Working With Parents

Class:3 Lab:0 Credit:3

An indepth look at working with parents and families in Early Childhood programs.

HDFS 12500 Children in Family Care

Class:3 Lab:0 Credit:3

An introduction to issues concerning the care of young children, the course will focus on practices appropriate for a wide range of children in family settings.

HDFS 20200 Infant & Toddler Supervised Experience

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Internship
Experiential learning in infant and toddler classrooms.
Prereqs: BHS 22800 with min grade of D AND (CDFS 21000 with min grade of D OR HDFS 21000 with min grade of D)

HDFS 20300 Advanced Infant/Toddler Curriculum

Class:3 Lab:0 Credit:3
An advanced look at infant-toddler development and theories while focusing on setting up an appropriate curriculum for the classroom.
Prereqs: BHS 22800 with min grade of D-

HDFS 20500 Introduction to Family Dynamics

Class:3 Lab:0 Credit:3
An examination of the interpersonal processes that take place within family contexts. Emphasis is on family dynamics with an extended focus on family interaction, family relationships, intimacy, conflict management and stages of family development. Also considered are linkages between family processes and the modern social environment and basic components of the research process.
Prereqs: SOC 10000 with min grade of D- OR PSY 12000 with min grade of D-

HDFS 21000 Introduction to Human Development

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education, TransferIN
An introduction to the development of individuals from conception through adulthood and aging. Physical growth, social and emotional behavior, cognitive and language development are covered.
Prereqs: PSY 12000 with min grade of D-

HDFS 21600 Introduction to Early Childhood Education

Class:3 Lab:0 Credit:3
A survey of early education programs, including center based, infant/toddler, family child care, and kindergarten. Course will include consideration of the history & theory of early childhood programs; program routines and organization for the healthy intellectual, social & physical growth of young children; professional relationships with parent and staff.

HDFS 21700 Issues in Early Childhood Education

Class:3 Lab:0 Credit:3
Study promoting positive development of children in a group environment. Course will focus on the importance of language, child initiative and activity, and socio-emotional guidance. Issues will be discussed in the light of multicultural diversity and special needs of children.

HDFS 22800 Developmental Infant and Toddler Care

Class:3 Lab:0 Credit:3
Discussion of frameworks, principles and techniques for infant toddler programs; focusing on the role of healthy environments and nurturing relationships with adults.

HDFS 23500 CDA Portfolio and Experience

Class:3 Lab:0 Credit:3
CDA Porfolio and Experience students must be regularly involved in an early care and education program. Students will prepare autobiograhical and goal statements, assemble resources and participate in discussion of issues in early care and education programs specifically geared to supporting the CDA program.

HDFS 30501 Art, Music and Movement in Early Childhood

Class:2 Lab:3 Credit:3
Course will focus on the development of expression in children of diverse backgrounds and needs. Students will develop resources and explore techniques. Discussions will include appropriate documentaion and display of children's work. Experiences with music, movement, and art activities will enhance understanding of cognitive, social-emotional and phyiscal development through expressive actiivities.

HDFS 30800 Language and Literacy in Early Childhood

Class:2 Lab:3 Credit:3

Course will focus on knowledge and teaching techniques for language arts and emergent literacy appropriate to children from ages 3-8. Students will develop resources and learn to plan for experiences with language and literature, including activities and materials such as: storytelling and story dictation, finger plays, flannel boards, and puppets. Students will consider the relation of language and literacy to cognitive, social, motional and physical development for children from diverse background and with diverse needs.

HDFS 31001 Math, Science & Social Studies in Early Childhood

Class:2 Lab:3 Credit:3

Course will focus on planning and resources for young children's cognitive, social-emotional and physical development through exploration of and interaction with materials, people and places. Students will plan logico-mathematical, physical, and social knowledge activities which are appropriate for children with diverse backgrounds and needs. In addition, students will consider the relationships between experiences with materials such as manipulatives, wood, prop boxes, and other sensory rich materials and with language and expressive activities. Overall planning, including curriculum webs, will be considred.

HDFS 33201 Child Care Administration

Class:3 Lab:0 Credit:3

Principles and practices of administering early childhood programs, including philosophical foundations, licensing requirements, administrative and operational decisions, home-school communication and staff support.

HDFS 34000 Teaching Young Children with Special Needs

Class:3 Lab:0 Credit:3

This course emphasizes integrative, inclusive approaches to teaching very young children with special needs, and working with their families. It provides strategies for supporting soical-emontional, motor, cognitivie and communicative development within the context of the early childhoood setting.

HDFS 35001 Internship In Early Childhood Settings

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Internship

A guided practical experience for students interested in working with young children. Students will spend 5 hours per week in any of a variety of settings serving children from ages 0-8. Under the guidance of the setting professional and the university supervisor, the student will decide on a topic for development, culminating in a student paper describing and documenting the experience. Note: This course must be taken in conjunction with one of the guided electives, associated with the Early Childhood Development minor. This course does not count for practicum credit.

HDFS 35400 Practicum In Early Childhood I

Class:2 Lab:3 Credit:3

Directed teaching for early education settings with attention to developmentally appropriate guidance. Course will focus on interaction with individual children and small groups. Students will participate in classroom activity planning, documentation of children's work and assessment.

Prereqs: HDFS 30800 with min grade of C- AND HDFS 30501 with min grade of C- AND HDFS 31001 with min grade of C-

HDFS 37500 Physical Aging, Health and Behavior

Class:3 Lab:0 Credit:3

This course is designed to provide students with knowledge concerning the effects of the aging process on physical systems of older adults. These systems include circulatory, respiratory, neurological, sensory, musculoskeletal, reproductive, etc. Students will also learn about acute and chronic illnesses, common among the elderly. The impact of physical health on mental health, medical treatment, and long-term care will be discussed.

Prereqs: PSY 12000 with min grade of D- OR SOC 10000 with min grade of D-

HDFS 38000 Disability and the Family Life Cycle

Class:3 Lab:0 Credit:3

This course provides students with information related to working with the families of individuals with disabilities. It focuses on the bidirectional impact of individuals with disabilities and their families throughout the life cycle.

HDFS 38200 Disability & Society

Class:3 Lab:0 Credit:3

This course is designed to introduce students to disability from progressive and contemporary diversity perspectives. Students are introduced to an overview of disability history theory, and current thinking in the field of disability studies. Students in this course will examine and analyze the service, support and community contexts in whihch people with disabilities live, work and participate. Students will also be exposed to experiential learning actvities that focus on understanding the challenges faced by individuals with disability related to inclusion across an array of edcuational, social, politicial and health related systems. Students will gain knowledge related to the range of disability policy and how it relates to professional issues for those working with individuals with disability.

HDFS 42100 Children's Social Development

Class:3 Lab:0 Credit:3

An advanced theoretical course focused on issues related to children's social development. The topics of attachment, autonomy, initive, play and developmentally appropriate child guidance will be explored within the context of social development.

HDFS 43101 Techniques Of Human Assessment

Class:3 Lab:0 Credit:3

An advanced study of the young child in the classroom. Course will include an in-depth case study of an individual child with a focus on observing and documenting children's work. Developmental assessment instruments and basic measurement theory will be discussed as it relates to teachers' observational information.

HDFS 45501 Practicum In Early Childhood II

Class:2 Lab:3 Credit:3

Open only to Early Childhood Development majors. Course will include all aspects of classroom planning, work with larger groups, documentation and observational assessment, and portfolio development.

Prereqs: HDFS 30800 with min grade of C- AND HDFS 30501 with min grade of C- AND HDFS 31001 with min grade of C-

HDFS 45601 Practicum With Infants And Toddlers

Class:2 Lab:3 Credit:3

Open only to Early Childhood Development majors. Directed in service teaching for infant and toddler settings. Course will focus on all aspects of planning and guidance for infants and toddlers addressing overall curriculum development and observational assessment.

Prereqs: HDFS 22800 with min grade of C- AND HDFS 35400 with min grade of C-

HDFS 46001 Guided Self Study For Experienced Early Childhood

Class:2 Lab:3 Credit:3

Development Teachers Status as the responsible teacher in an early childhood setting for at least 5 years, with recommendation from supervisory staff. This course will be an alternative to BHS 35500, Practicum II. It is designed for students who already have substanial experience leading early childhood classrooms. Students will consider issues that arise in their own classroom practice. They will propose and implement changes and reflect on the results.

HDFS 47000

Class:3 Lab:0 Credit:3

HDFS 48400 Genetic & Physiological Factors Underlying Dev Disabilities

Class:0 Lab:0 Credit:3

This course iwill explore the genetic and physiological factors that will contribute to the expression of some common developmental disabilities. This course will begin with a 2-week unit that explores the process by which genes influence human development, including kealth and behavior. A second 2-week unit will cover pre-natal development, including:sensitive periods of development, teratogenic effects, and genetic counseling, prenatal diagnostic tests, difficult births and the pre-term and small-for-date baby. The third unit (2-3 weeks) will focus on the physiology of the developing human nervous system during the prenatal periold, infancy and early childhood. Development of the sensory systems will be given special attention. Approximately 9-10 weeks will be devoted to discussing the etiology, dianosis (including differntial diagnosis), treatment and prognosis of some of the major developmental disabilities. Discussion will include, but not be limited to: autism spectrum disorder, attention deficit disorder, delayed development, cerebral palsy, hearing loss, impared vision, common Mendelian genetic disorder, neuromuscular disorders, and various types of mental retardation.

HEBR 10100 Hebrew Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1
Introduction to Hebrew.

HEBR 10200 Modern Hebrew Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2
Continuation and extention of the first semester. The course aims to develop fluency in reading, comprehension, and spoken language. Knowledge of grammar and vocabulary is expanded.
Prereqs: HEBR 10100 with min grade of D-

HEET 02100

Class:3 Lab:0 Credit:0

HEET 02300

Class:3 Lab:0 Credit:0

HEET 03000

Class:3 Lab:2 Credit:0

HEET 03100

Class:2-3 Lab:2 Credit:0

HEET 04000

Class:2-3 Lab:2-2 Credit:0

HEET 04100

Class:3 Lab:0 Credit:0

HEET 06100

Class:3 Lab:0 Credit:0

HIST 10400 Introduction to Modern World

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
Traces the historical, political, and geographical expansion of European society and culture into the Americas, Africa, and Asia. Such topics as the major political revolutions, nationalism, the development of the European states, and the enviromental impact from the era of the Reformation to the present are studied.

HIST 10600 Introduction to History and Social Studies

Class:3 Lab:0 Credit:3
This course is designed as both the introductory course for History Majors and Social Studies Education Majors and fulfills the general education requirement for the "freshman experience" class. It is designed to provide the basic tools of college-level reading and writing needed to become effective historians and Social Studies teachers.

HIST 11000 The Pre-Modern World

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
A survey of the ancient and medieval periods from late prehistoric times to the 17th century. Major emphasis is placed on ancient civilizations, the development and flowering of medieval, political, religious, economic and cultural institutions in Western and non-Western societies; the impact of geographic and environmental factors in the historic, social and cultural changes, and the dawn of modern times.

HIST 15100 American History To 1877

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN
A study of development of American political, economic, and social institutions in their geographical and environmental context from the early explorations and Colonial settlements through Reconstruction.

HIST 15200 United States Since 1877

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN
A study of the growth of the United States from 1877 to the present. The new industrialism, agrarian problems, geographical and environmental consequences, depression, the New Deal, the two world wars, the cold ward and similar topics are analyzed.

HIST 21500 Sub Sahara Africa

Class:3 Lab:0 Credit:3
A survey of n history which traces the development of this part of Africa from prehistoric times to the present. Major emphasis is directed toward recognizing the importance of Africa and Africans in history and pre-history. A brief survey of the early history of Africa, the Middle Age of African history with Africa's rich cultural and artistic heritage, the nature of African political systems, the rise and decline of the powerful kingdoms and empires, the era of the Altantic Slave Trade, the colonial period, nationalist movements, and the diverse economic and political systems that have developed in post-independence Africa.

HIST 22800 English History To 1688

Class:3 Lab:0 Credit:3
This course is designed to survey the growth and development of English society from its beginning through the 17th century. Emphasis is put upon those institutions and events that influenced the establishments of the English legal system.

HIST 22900 English History Since 1688

Class:3 Lab:0 Credit:3
A continuation of HIST 22800. Emphasis is placed upon Great Britain as a world and imperial power. Attention is given particularly to the industrial revolution, the growth and achievements of democratic institutions, and the role Britain has played in western civilization in recent times.

HIST 23100 Introduction to United States Foreign Policy

Class:3 Lab:0 Credit:3
This course is designed to introduce students to the major themes and issues in the contemporary history of United States foreign policy. Lectures, discussion and readings will examine such areas as United States relationships with the major powers, the Third World and international organizations. Students with credit in POL 23100 - may not receive credit for this class.

HIST 24500

Class:3 Lab:0 Credit:3

HIST 27100 Introduction To Colonial Latin American History (1492-1810)

Class:3 Lab:0 Credit:3
A survey of Latin American History from its origins to the end of the major movements toward independence with emphasis on discover, colonization, sxpansion and the transfer of institions from Spain to Portugal.

HIST 27200 Intro To Modern Latin American History (1810 to Present)

Class:3 Lab:0 Credit:3
A survey of Latin American history from independence to the present with particular attention on political, economic, and social problems connected with modernization.

HIST 29500 Research And Writing In History

Class:3 Lab:0 Credit:3
This course is designed to train history majors in the fundamentals of historical research and writing. It or HIST 58200 -The Art of History- is required of all History majors.

HIST 30100 Episodes in American Religious History

Class:3 Lab:0 Credit:3

Introduces students to the study of religion in the United States by focusing on particular groups or movements. Each religious episode is placed in the appropriate historical context and in relation to other religious experiences and expressions. Subjects vary but could include Puritanism, Mormonism, and twentieth-century popular religion.

HIST 30600 The United States In 1960's

Class:3 Lab:0 Credit:3

A description and analysis of major domestic and foreign, social, political, military, and diplomatic issues confronting the United States in the 1960's and approaches and efforts to resolve these issues. The class will utilize the 1960's as a laboratory to provide students with both historical and political science skills and approaches to the issues and themes of a particular period. May be taken for history or political science credit.

Prereqs: HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 30800 Britain And The Empire

Class:3 Lab:0 Credit:3

This course will examine Britain and her empire from the reign of Queen Victoria through the career of Margaret Thatcher. It will investigate the political, economic and social role of the imperial power and explore how various subject peoples reacted.

Prereqs: HIST 10400 with min grade of D-

HIST 30900 The Middle East

Class:3 Lab:0 Credit:3

A survey beginning with the period of European involvement in the Ottoman Empire up to the present. The course includes the study of political Zionism and Arab nationalism, the role of the major powers between the two World Wars and that of the United States and the Soviet Union during the Cold War, and the developments in the Middle East in the post-Cold War era.

Prereqs: HIST 10400 with min grade of D-

HIST 30901 History Of Iraq And Jordan

Class:3 Lab:0 Credit:3

This course will cover the history of Iraq and Jordan from the two Hashemite Monarchies after World War I through the beginning of the 21st century. The course will examine the relationship of both states with Britain, the United States, Israel and the Arab world. In addition, the course will focus attention on Arab leaders, including King Hussein and Saddam Hussein.

HIST 31000

Class:3 Lab:0 Credit:3

Prereqs: HIST 10400 with min grade of D OR HIST 11000 with min grade of D OR HIST 15100 with min grade of D OR HIST 15200 with min grade of D

HIST 31100

Class:2 Lab:3 Credit:3

Prereqs: HIST 15100 with min grade of D OR HIST 15200 with min grade of D

HIST 31300 Modern Germany

Class:3 Lab:0 Credit:3

Defines the nature of medieval Holy Roaman Empire in the early modern era. Examines after 1806 the development of German nationalism and the unification movements; the position of the Germans of Austria; the period of German unity under the Hohenzollens, Wimar Republic, and Hitler; and the post-World War II division and reunification of Germany.

Prereqs: HIST 10400 with min grade of D-

HIST 31400 Modern Russia

Class:3 Lab:0 Credit:3

Analyzes the development of the modern Russian territorial state and its civilization from the pre-Petrine Era through the rise and eclipse of the Communist regime.

Prereqs: HIST 10400 with min grade of D-

HIST 31500 Modern Nationalism

Class:3 Lab:0 Credit:3

Analyzes the nature and development of modern nationalism as a force of integration and disintegration in various major European and non-European states.

Prereqs: HIST 10400 with min grade of D-

HIST 31600 History Of Architecture II

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education

The study of Western architecture of the eighteenth, nineteenth and twentieth centuries with an emphasis on the related structural, technological, socioeconomic and cultural influences that contributed to the architectural expressions of these periods. (Not open to students with credit in ARET 31000)

Prereqs: HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 31900 The History Of Modern Israel

Class:3 Lab:0 Credit:3

This course will cover the history of political Zionism, the establishment of the state of Israel, and the economic, social, and political development of the country from 1948 until the present. It also will examine the Arab-Israeli conflict and the peace process, and the relationship between the United States and Israel.

Prereqs: HIST 10400 with min grade of D-

HIST 32100 Europe in 19th Century

Class:3 Lab:0 Credit:3

Analyzes major developments from the downfall of Napoleon to the out-break of World War I. Emphasis is placed on main currents in international relations, domestic affairs of major European States, the Revolution of 1848, and ideological, cultural, intellectual trends of the period.

Prereqs: HIST 10400 with min grade of D-

HIST 32500 History Of Crime In America

Class:3 Lab:0 Credit:3

A study of the history of crime in America from the 19th century to the present. Emphasis will be placed on violent crime, the public's response to it, and the cultural expressions of crime through literature and the popular media.

Prereqs: HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 33100 Great Figures in History

Class:3 Lab:0 Credit:3

A series of autobiographical and biographical sketches of figures, distinguished as well as lesser-known, in all fields of activity.

Prereqs: HIST 10400 with min grade of D- OR HIST 15200 with min grade of D- OR HIST 15100 with min grade of D-

HIST 33300

Class:3 Lab:0 Credit:3

Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D-

HIST 33400 Science And Technology In Western Civilization II

Class:3 Lab:0 Credit:3

A survey of some of the main features of the historical development of science and technology in the western world from Newton to the present. Emphasis is placed upon the relation between the achievements of individual investigators and the major aspects of the society and culture in which they lived.

Prereqs: HIST 10400 with min grade of D- OR HIST 15200 with min grade of D-

HIST 33600 History Of Organized Crime In America

Class:3 Lab:0 Credit:3

An examination of the evolutionary process leading to the complex social phenomenon of organized crime. Emphasis will be placed upon the rise of gangs, the Mafia mystique, the immigrant and crime, and the cultural expressions of organized crime through literature and the popular media.

Prereqs: HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 33800 Asia In The Modern Era

Class:3 Lab:0 Credit:3

The history of Modern China, Japan, India, and Indo-China. In addition to politics and government, emphasis is placed on institutional and cultural developments, religion and philosophy, social structure, and art. The interaction of Western and Oriental civilizations is stressed.

Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 34001 This course is an introduction to various aspects of Chinese

Class:3 Lab:0 Credit:3

civilization from its origin to 1900. While offering a comprehensive overview of the 4000 year of Chinese history, this course focuses on the changes and continuities of Chinese economy, culture, politics and society.

HIST 34002 History of Modern China

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research

This course is an introduction to various aspects of the Chinese civilzation from 1900 to the present. While offering a comprehensive overview of the 110 years of Chinese history, this course focuses on the changes and continuities of Chinese economy, culture, politics and society.

HIST 34600 The Era Of World Wars I And II, 1914-1945

Class:3 Lab:0 Credit:3

Analyzes the causes, major campaigns, and legacy of the two major conflicts of the twentieth century. Examines the rise of totalitarian dictatorships, in particular Nazi Germany and Communist Russia. Emphasis is placed on the biographical study of the great historic personalities who helped shape the era, including Adolf Hitler, Benito Mussolini, Josef Stalin, Winston Churchill, and others.

Prereqs: HIST 10400 with min grade of D- OR HIST 15200 with min grade of D-

HIST 34700 The Roaring Twenties

Class:3 Lab:0 Credit:3

An assessment and analysis of the nature of political, social, religious, economic, cultural, intellectual, and diplomatic change and the response to that change in the United States of the 1920's.

Prereqs: HIST 15200 with min grade of D- OR HIST 10400 with min grade of D-

HIST 34800 Depression Decade

Class:3 Lab:0 Credit:3

The Great Depression of the 1930's had a profound and often tragic impact on American life and society. This course will attempt to analyze that impact and its social, political, economic, cultural, diplomatic, and institutional consequences.

Prereqs: HIST 15200 with min grade of D-

HIST 34900 Intro. To Jewish Studies

Class:3 Lab:0 Credit:3

Also cross-listed as IDIS 33000 and POL 34900. An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts of Judaism, such as God, Torah, People, Land and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture.

Prereqs: HIST 10400 with min grade of D- OR POL 10100 with min grade of D- OR HIST 11000 with min grade of D-

HIST 36300 Europe Since 1945

Class:3 Lab:0 Credit:3

Must be Sophomore standing. This course will cover the restoration of western Europe after World War II and the division of Europe into two mutually hostile camps: one communist, the other capitalist. The course will review the history of the Cold War and explore the political, social and economic factors that led to the end of the Soviet Empire. The course will also attempt to discuss the aftermath of the demise of the Soviet Union, ethnic violence, social disintegration, and economic decline. It will also look at the beginning of democratic institutions.

HIST 36400 England in the 20th Century

Class:3 Lab:0 Credit:3
Emphasizing political and social history, this course will investigate the British role in both World Wars. The course will also explore how the British adapted to their changing circumstances. Readings and lectures will cover a variety of issues, including the role of British women, establishment of the welfare state and Britain's reluctance fully to embrace the European community.
Prereqs: HIST 10400 with min grade of D-

HIST 36500 Women In America

Class:3 Lab:0 Credit:3
Not open to students with credit in WOST 36500. A survey of the history of women in America from colonial times to the present. Emphasis is on changing status of women, social and cultural influences, movements for women's contributions to American society.
Prereqs: HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 36900 Research In History

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
A research writing, and oral presentation course organized around semester-long topics or themes, selected by the instructor to reflect his/her area of knowledge and interest. Readings and course bibliographical materials will change with each offering. The class will focus primarily on undergraduate research and writing. This course will be mandated for all majors.
Prereqs: HIST 29500 with min grade of D-

HIST 37000 The Holocaust

Class:3 Lab:0 Credit:3
A survey of the Holocaust form 1933 to 1945. The course includes analysis and historical descriptions of such topics as the background and nature of Nazi racism, Nazi persecution from 1933 to 1941, the Final Solution from 1941 to 1945, the concentration camp experience, resistence, the apathy and indifference of bystanders, rescue efforts, assessment of the significance of the Holocaust, and historical interpretation of the Holocaust.
Prereqs: HIST 10400 with min grade of D- OR HIST 15200 with min grade of D-

HIST 37300 The Caribbean

Class:3 Lab:0 Credit:3
Will explore various topics and issues unique to the Caribbean. Emphasis will be placed on European and African influence on the complex nature of Caribbean history languages and literature, societies and cultures.

HIST 37400 United States Economic History

Class:3 Lab:0 Credit:3
Also ECON 37500. Not open to students with credit in ECON 37500. A study of the growth of the American economy from colongial times to the late 19th century. Emphasis is placed on the application of the tools of economic analysis to historical questions concerning the sources and rate of growth, the relationships between growth and structural and institutional change, and the impact of industrialization on the quality of life in the American Economy.
Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 37600 History Of Indiana

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Cultural Immersion
Economic, political, and social history of Indiana from the state's earliest beginnings as a part of the old Northwest Territory to the present.

HIST 38000 American Environmental History

Class:3 Lab:0 Credit:3

This class will focus on who and why Americans living at particular times and places used and transformed their environment. Examining such familiar topics as colonization, the frontier, the industrial revolution, slavery, the Civil War, and the emergence of modern-day consumer culture, the class will show how to interaction of Americans with the natural world has influenced the development of a distinctive society.

Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 38100

Class:3 Lab:0 Credit:3

Prereqs: HIST 15100 with min grade of D OR HIST 15200 with min grade of D

HIST 38200

Class:3 Lab:0 Credit:3

Prereqs: HIST 15100 with min grade of D OR HIST 15200 with min grade of D

HIST 38800 The World Of Ideas I

Class:3 Lab:0 Credit:3

Not open to students with credit in POL 38800 or PHIL 38800 The first half of a two-semester chronological sequence based on reading and discussing source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization.

Prereqs: HIST 11000 with min grade of D- OR HIST 10400 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D- OR POL 10100 with min grade of D-

HIST 38900 The World Of Ideas II

Class:3 Lab:0 Credit:3

Not open to students with credit in POL 38900 or PHIL 38900 The second half of a two-semester chronological sequence based on reading and discussing primary source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society.

Prereqs: HIST 10400 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D- OR HIST 11000 with min grade of D- OR POL 10100 with min grade of D-

HIST 39000 Topics In History

Class:3 Lab:0 Credit:3

Attributes: Variable Title

May be repeated for credit. Variable title.

Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 39300 Historical Geography

Class:3 Lab:0 Credit:3

This class addressess general topics in the discipline of Geography. It seeks to educate students so that they can consider the spatial dimensions of historical, political, economic, and social themes and problems. In addition, the course seeks to develop the general skills of the discipline, especially those related to cartography. Students receiving credit for this as GEOG class may not also receive credit as a HIST class and vice versa.

Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D- OR EAS 11000 with min grade of D- OR EAS 22000 with min grade of D-

HIST 39700 The Afro-American

Class:3 Lab:0 Credit:3

A survey of the history of the Afro-Americans in the United States from their African background to the present. Emphasis is placed upon the changing economic, social, and political status of Afro-Americans in the United States, and upon their contributions to American society.

HIST 41000 Community Preservation Project

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Service Learning

Students will gain a broad understanding of the field of historic preservation. We will examine different types of historically significant resources, methods of documentation and interpretation, and the process of historic designation. This course requires 30 hours of field work.

HIST 42400 Latin American Societies

Class:1-3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Cultural Immersion

This course gives students an opportunity to learn the history of Latin American societies, speaking with Latin Americans from various segments of society, and integrating traditional studies with cultural immersion. This course may be offered at least once a year, each time addressing a different topic related to the history of Latin American societies, and including a trip to a different country in Latin America. May be repeated for credit.

Prereqs: HIST 11000 with min grade of D OR HIST 15100 with min grade of D OR HIST 15200 with min grade of D OR HIST 10400 with min grade of D OR HIST 27100 with min grade of D OR HIST 27200 with min grade of D

HIST 42600 History of US-China Relations

Class:3 Lab:0 Credit:3

This course covers the history of US-Chinese relations since 1784. While mapping the changing American strategies from containment to engagement with China, the course focuses on political, economic, social, and cultural aspects between the two nations. The course also addresses US-Chinese diplomatic relations and the involvement of other major players, such as Russia, Japan, Taiwan and Europe.

HIST 46100 The Revolutionary Era, 1763 To 1800

Class:3 Lab:0 Credit:3

An analysis of the origins, nature, and consequences of the American Revolution; of the achievements and difficulties of the new nation under the Articles of Confederation; of the drafting and adoption of the Constitution; and of the initial political, economic, and social progress of the United States under the Federalists.

HIST 47200 History of Mexico

Class:3 Lab:0 Credit:3

A history of the Mexican people from the pre-Columbian period to the present. Special emphasis is placed on the successful social revolutions that led to the development of today's dynamic nation.

HIST 49000 Topics in History

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Topics will vary

Prereqs: HIST 10400 with min grade of D- OR HIST 11000 with min grade of D- OR HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

HIST 49300

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Prereqs: HIST 10400 with min grade of D OR HIST 11000 with min grade of D OR HIST 15100 with min grade of D OR HIST 15200 with min grade of D

HIST 49400

Class:3 Lab:0 Credit:3

Prereqs: HIST 15100 with min grade of D OR HIST 15200 with min grade of D

HIST 49800

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Prereqs: HIST 10400 with min grade of D OR HIST 11000 with min grade of D OR HIST 15100 with min grade of D OR

HIST 15200 with min grade of D

HIST 51200

Class:3 Lab:0 Credit:3

HIST 51400

Class:3 Lab:0 Credit:3

HIST 51500

Class:3 Lab:0 Credit:3

HIST 52500 Problems in Twentieth Century German History

Class:3 Lab:0 Credit:3

A study in depth of three major periods of German history in the century: pre-1914, the Weimar Republic, and the Third Reich. Emphasis is placed on the transformation which occurred in German society as a result of the upheavals of this century.

Prereqs: HIST 10400 with min grade of B- OR HIST 11000 with min grade of B- OR HIST 15100 with min grade of B- OR HIST 15200 with min grade of B-

HIST 55300 Colonial America, 1600-1776

Class:3 Lab:0 Credit:3

A study of the expansion of Europe, the age of exploration and discovery, and the establishment of colonies in the New World. Particular attention will be paid to the emergence of an American culture during the 17th and 18th centuries, the nature of the British Empire, and the emergence of dissent and revolution.

HIST 55500 The Emergence Of Modern America, 1865-1916

Class:3 Lab:0 Credit:3

An examination of the nation that emerged emotionally exhausted from a civil war. The interaction of a flourishing industrial establishment, floods of immigrants, rapid urbanization, and smoldering racism combined to transform ante bellum America into a complex and relatively sophisticated society during those years. Emphasis will be placed upon an analysis of these forces and the men who tried to control them.

HIST 57500 The American Frontier

Class:3 Lab:0 Credit:3

This course will involve study of the nature and importance of the westward movement in American history from the Revolution to the 20th century. The westward movement will be treated in its varied aspects. Emphasis will be placed upon social and economic aspects as well as upon the spread of government. Although the Turner thesis will be discussed, no attempt will be made to pursue a thesis.

HIST 57700

Class:3 Lab:0 Credit:3

HIST 58400 Social History Of The United States

Class:3 Lab:0 Credit:3

Social and cultural development of the American people since the late 18th century.

HIST 58500

Class:3 Lab:0 Credit:3

HIST 58600 United States Foreign Affairs to World War I

Class:3 Lab:0 Credit:3

An examination of the economic, political and ideological factors which shaped American foreign policy from the colonial era until WWI. Course emphasizes the drive for territorial and commercial expansion which propelled the United States to a position of world power.

HIST 58700 United States Foreign Affairs, World War I To Present

Class:3 Lab:0 Credit:3

An examination of the economic, political, and ideological factors which shaped American foreign policy from WW I until present. Course emphasizes the intimate relation between domestic conditions and the growing involvement of the

United States in world affairs.

HIST 58900 History Of Religion In America

Class:3 Lab:0 Credit:3

A historical examination, from colonial beginnings to the present, of American religions and their role in the social, political, and economic life of the nation.

HIST 59000 Directed Reading In History

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

May be repeated for credit. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls. Approval of each reading project must be secured from the department.

HIST 59200

Class:3 Lab:0 Credit:3

HIST 59300

Class:3 Lab:0 Credit:3

HIST 59600

Class:3 Lab:0 Credit:3

HIST 60100 Reading Seminar In European History

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

Must be at Graduate standing to take this course. May be repeated for credit.--- Bibliography and historiography of selected fields of topics in European history; may vary in subject matter from semester to semester.

HIST 65100 Reading Seminar In American History

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

Student must be at Graduate standing. May be repeated for credit. Bibliography and historiography of selected fields or topics in American history; may vary in subject matter from semester to semester.

HIST 69800

Class:1-18 Lab:0 Credit:1-18

Attributes: Variable Title

HONR 10000 Freshman Honors Seminars

Class:3 Lab:0 Credit:3

Admission to the Honors Program. A freshman experience course directed to honors students. This course provides an orientation to the Honors Program, the university environment and an introduction to research methods, covering library research, experimental design, survey design, statistical analysis, critical thinking, logic and ethics. Students will critically examine research topics by evaluating evidence and the conclusions that may be drawn.

HONR 29000 Special Topics

Class:1-4 Lab:0 Credit:1-4

Attributes: Variable Title

Admission to the Honors Program. Restricted to Honors Program students, this course will involve an investigation of a specific problem or topic.

HONR 39000 Junior Level Topics

Class:1-4 Lab:0 Credit:1-4

Attributes: Variable Title

Admission to the Honor Program. Restricted to Honors Program students, this course will involve an investigation of a specific problem or topic.

HONR 40000 Honor Capstone Project

Class:1-3 Lab:0 Credit:1-3

Admission to Honors Program. Restricted to students in the honors program with at least Junior standing. This is an upper level honors course mandating a major supervised research effort or practicum resulting in a written report and public, oral dissemination.

HONR 49000 Senior Level Topics

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
Admission to Honors Program. Restricted to Honors Program students, this course will involve an investigation of a specific problem or topic.

HORT 10200 Fundamentals Of Horticulture

Class:3 Lab:0 Credit:3
Study of the biology and technology involved in the production, storage, processing and marketing of ornamentals, fruits, vegetables, and other horticultural plants.

HSCI 10500 Facts of Life

Class:3 Lab:0 Credit:3
The study of the human body in health and disease. Topics include basic structure and function of the human body and an overview of human biology related to genetics, evolution, impact on the environment, and human wellness issues. Career opportunities will be discussed.

HSCI 20000 Preceptorship in the Medical Sciences

Class:0 Lab:1 Credit:0
Attributes: Lab Science
Sophomore or higher standing; consent of the preceptorship committee. The course is designed to provide a pre-professional school experience for students seeking careers in fields such as medicine, dentistry and physical therapy. Individual programs will be designed by the health professional advisor, the student and a practicing health professional. The student will spend one week in a clinical study under the direction of health professionals. Such units as hospital rotations, dental office experience, government health office experience, etc., will be included. A written report of the experience will be made to the advisor and cooperating health professionals.

HSCI 23000 Introduction to Paramedicine

Class:3 Lab:0 Credit:3
This course includes instruction in the roles and responsibility of the paramedic, orientation to the hospital and field settings, medical legal aspects of care, patient assessment, trauma management, management of stress and behavioral emergencies, pastoral care orientation, pre-hospital scene management, universal precautions, hazardous materials identification and response.

HSCI 23100 Pathophysiology of Disease States

Class:4 Lab:0 Credit:4
The pathophysiology, assessment and treatment of shock as well as review of fluid and electrolyte abnormalities in medical emergencies will be examined.

HSCI 23200 Introduction to Anatomy & Physiology

Class:0 Lab:0 Credit:4
Attributes: Lab Science
Review of topographical anatomy, cellular anatomy and physiology and human organ systems.

HSCI 23300 Emergency Pharmacology

Class:4 Lab:0 Credit:4
Emphasis of this course is therapeutic effects, indications, route of administration, dosages, and side effects of medications used in the pre-hospital setting. Techniques of venipuncture, intavenous, cannulation, precutaneous injection, arterial blood gas analysis, nasograstic intubation and urinary catherterization are taught.

HSCI 23400 Cardiopulmonary Emergencies

Class:4 Lab:0 Credit:4
Pathophysiology, assessmemt and treatment of cardiopulmonary emergencies are discussed. Fundamentals of airway

management electrocardiology, and interpretation of normal and abnormal ECG patterns are studied. Effects of medications on the cardiopulmonary system is emphasized.

HSCI 23500 Medical and Envrionmental Emergencies

Class:4 Lab:0 Credit:4

Topics discussed include neurological environmental, pediatric, obstetric, gynecological, endocrine and toxicological emergencies. Special emphasis on the needs of the geriatric, psychiatric and communicable diseases patient will be stressed.

HSCI 23600 Advanced Life Support

Class:4 Lab:0 Credit:4

American Heart Association cardiopulmonary resuscitation standards, advanced cardiac life support lectures and practical skills stations will be taught. Advanced Cardiac Life Support certification will be achieved.

HSCI 23700 Prehospital Search and Rescue

Class:0 Lab:2 Credit:1

Attributes: Lab Science

This course provides classroom and field experiences designed to expose the student to effective search and rescue operations. Concepts explored include incident command, disaster triage techniques, principles of extrication, water high rise and confined space rescue.

HSCI 23800 Clinical Experiences I

Class:0 Lab:2 Credit:1

Attributes: Lab Science

This course provides the clinical setting to correlate the knowledge objectives from HSCI 23000 and HSCI 23100. Included are rotations in the Emergency Department, Social Services, Behavioral Treatment Center, Pastoral Care and Pathology.

Prereqs: HSCI 23000 with min grade of D- AND HSCI 23100 with min grade of D-

HSCI 23900 Clinical Experiences II

Class:0 Lab:0 Credit:1

A continum of HSCI 23800 with an emphasis on invasive techniques in critical care units. Rotation in the Emergency Department, Clincial Laboratory (including morgue), Surgery, Anesthesiology, Cardiovascular, and Medical Intensive Care Units are provided. Exposure to Cardiac Catherization and Telemetry is included.

Prereqs: HSCI 23800 with min grade of D-

HSCI 24000 Clinical Experiences III

Class:0 Lab:0 Credit:2

Students will be rotated through pediatrics, nursery, obstetrics, neuro surgical intensive care unit, physical medicine and rehabilitation. Geriatic extended care facility, a continuation of Emergency Department, Critical Care Units, and sampling of other hospital-based specialty care areas will be included.

Prereqs: HSCI 23800 with min grade of D- AND HSCI 23900 with min grade of D-

HSCI 24100 Field Internship I

Class:0 Lab:0 Credit:1

In this course students are assigned to paramedics in the pre-hospital setting, performing assessment, treatments, documentation and pre-hospital field communications under direct supervision.

HSCI 24200 Field Internship II

Class:0 Lab:0 Credit:2

A continuance of HSCI 24100 with an emphasis on invasive techniques in the pre-hospital setting. Advanced cardiac and respiratory assessment and management, including endotracheal intubation, intravaneous cannulation and medication administration will be performed with the guidance of the paramedic preceptor.

Prereqs: HSCI 24100 with min grade of D-

HSCI 24300 Field Internship III

Class:0 Lab:0 Credit:2

A continuance of HSCI 24100 and HSCI 24200. The emphasis of this course is to provide the student an opportunity to refine the proficiency of previously learned skills and to synthesize all knowledge as it relates to the patient with an emergent pre-hospital need. The student at this point should be able to assess and perform appropriate interventions and therapy for all patients and situations to which they are exposed. The student will be placed in the position of team leader and primary care paramedic with the direct supervision on the paramedic preceptor.
Prereqs: HSCI 24100 with min grade of D- OR HSCI 24200 with min grade of D-

HSCI 24400 Patient Assessment

Class:0 Lab:0 Credit:4
Techniques of the physical exam will be demonstrated and practiced in this course with special emphasis on organ systems as they are being studied. Relating the physical exam to the clinical impression will also be emphasized. Students will be assigned to physician preceptors.
Prereqs: HSCI 23200 with min grade of D-

HSCI 24500 Physical Exam II

Class:0 Lab:0 Credit:1
A continuance of HSCI 24400 with emphasis on relating the physical exam to the clinical impression. Students will be assigned to physician preceptors.

HSCI 45100 Clinical Biochemistry

Class:1-10 Lab:0-10 Credit:1-10
This course is designed to provide principles of biochemistry for clinical application for medical technologists. The course encompasses an introduction to carbohydrate, amino acid and lipid metabolism. Also included are lectures on basic endocrinology, enzymes, and biosynthesis of steroid hormones. Physiological principles are stresses with respect to liver, lung and kidney function. Special emphasis is placed on correlation of the theoretical and clinical areas.

HSCI 45200 Clinical Chemistry

Class:1-10 Lab:0-10 Credit:1-10
This course is designed to provide the medical technologist with the principles and application of clinical chemistry. Methods of instrumental analysis include a variety of automated procedures, electrophoresis, immunoelectrophoresis, immundiffusion, radioisotopes, steroids, hormone assay, and toxicology. Quality control for clinical chemistry is included. Supervised clinical laboratory experience is offered, with students rotating through the various areas of clinical chemistry on a sequential rotational basis.

HSCI 45300 Clinical Hematology

Class:1-10 Lab:0-10 Credit:1-10
Study of the functions, maturation and morphology of blood cells. Blood cells, platelets and reticulocyte counting procedure. Experiences in the study of cellular content of other body fluids are offered. Lectures and laboratory are designed to teach techniques of sedimentation rates, hematocrits, corpuscular indices, hemoglobin red cell fragility and special staining procedures. Also routine and special coagulation studies are taught. Supervised experience in clinical hematology offers opportunities for study in routine and special hematology and coagulation procedures.

HSCI 45400 Clinical Immunohematology

Class:1-10 Lab:0-10 Credit:1-10
A review of serologic principles and technical fundamentals of transfusion practice; a comprehenshive consideration of all blood groups, with emphasis on ABO and Rh-Hr blood group systems. Extensive practice is gained in pre-transfusion techniques and antibody identification in the laboratory. Other blood types are antigen-antibody relationships are taught in laboratory and lectures. Also included are blood donor room procedures; preparation of blood components; correlation of blood component therapy with disease states; quality control of all reagents, procedures, and equipment used; and laboratory safety measures, all of which offer the best patient care and protection of laboratory personnel.

HSCI 45500 Clinical Microbiology

Class:1-10 Lab:0-10 Credit:1-10
Lectures and clinical laboratory experience in diagnostic procedures as aids to the diagnosis of human disease. Proper selection of techniques for the isolation and identification of medically important bacteria. Special emphasis is placed on newer methods of anaerobic bacteria identification. Also includes lectures and laboratory identification in the fields of

mycology and microbacteriology, with emphasis on isolation and identification, Practical applications of fluorescent antibody tests are performed.

HSCI 45600 Clinical Nuclear Medicine

Class:1-10 Lab:0-10 Credit:1-10

Lectures and clinical rotation designed to familiarize the medical technology student with the terminology, instrumentation, dosages and "in vitro" and "in vitro" rationale and procedures pertinent to a nuclear medicine department.

HSCI 45700 Clinical Parasitology

Class:1-10 Lab:0-10 Credit:1-10

Techniques of specimen examination, identificaiton of cysts and ova, life cycles of parasites.

HSCI 45800 Clinical Serology

Class:1-10 Lab:0-10 Credit:1-10

Lectures and a laboratory experience in serology, including the preparation of antigen, flocculation tests for syphilis, heterophile antibody tests, creative proteins, RA test, FTA, rubella testing. Also included are lectures in immunology that include classifications of immunoglobulins, mechanism of antibody formation; immune response, types of antigen-antibody reactions; and theories of radioimmunassay.

HSCI 45900 Clincial Toxicology

Class:1-10 Lab:0-10 Credit:1-10

A basic orientation in the use of instrumentation, such as mass spectrophotometry, and liquid and gas chromatography that is used in the specialized toxicology laboratory.

HSCI 46000 Clinical Urinalysis

Class:1-10 Lab:0-10 Credit:1-10

Routine analysis, chemical tests, sediment identification, renal function tests and pregnancy tests.

HSCI 46100 Clinical Virology

Class:1-10 Lab:0-10 Credit:1-10

Techniques involved in the preformance of virologic studies for rubella, influenza, mumps, Newcastle disease, herpes, polio, hepatitis. Tissues cultures are maintained for primary virus isolation.

HSCI 46200 Clinical Cytology

Class:1-10 Lab:0-10 Credit:1-10

Lectures and laboratory experience in examination of body fluids: e.g., spinal fluid, synovial fluid, and seminal fluid. Lectures on the use and application of various types of microscopy.

HSCI 46300 Clinical Histology

Class:1-10 Lab:0-10 Credit:1-10

Histologic technique (principles of dehydration, embedding, sectioning, routine staining, frozen sections, decalcification, exfoliative cytology)

HSCI 46400 Clinical Anatomy and Physiology

Class:1-10 Lab:0-10 Credit:1-10

Review of the structure and function of the systems most concerned with laboratory tests; heart, kidney, liver, hematopoietic system, etc.

HTM 10000 Introduction to the Hospitality & Tourism Industry

Class:1-3 Lab:0 Credit:1-3

Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education

An overview of supervisory careers, opportunities, and responsibilities in the food service and lodging industry.

HTM 10100 Hospitality and Tourism Student Seminar

Class:1 Lab:0 Credit:1

Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education

This course assists the student new to Purdue to become acquainted with the Purdue system and with the HTM department and program. Information presented to assist students with developing strategies for academic and career-related success at Purdue.

HTM 14100 Financial Accounting for the Service Industries

Class:3 Lab:0 Credit:3

Fundamental accounting principles and procedures applied to the hospitality and service industries. Includes study of uniform system of accounts, financial statements, special purpose journals and subsidiary ledgers unique to the hospitality and service industries.

HTM 18100 Lodging Management

Class:3 Lab:0 Credit:3

Organization, managment and operating procedures of lodging facilities. Guest-employee interactions will be analyzed along with current trends and cutting edge topics in the lodging industry. A history of lodging industry will be discussed.

HTM 19100 Sanitation and Health in Foodservice, Lodging and Tourism

Class:3 Lab:0 Credit:3

Food safety and other health related issues in the hospitality and travel industries. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification Examination to receive credit.

HTM 21200 Organization & Mgmt in the Hospitality & Tourism Industry

Class:3 Lab:0 Credit:3

Prerequisite: Classification 3 or higher. Basic principles of planning, organizing, directing and controlling human and physical resources will be addressed. Students will learn how these principles can be applied to maximize the organizational effectiveness of hospitality and tourism business.

HTM 23100 Hospitality and Tourism Marketing

Class:3 Lab:0 Credit:3

Provides students with a customer-oriented approach to marketing in hospitality and tourism. Techniques available to hotels, restaurants, tourism, and travel businesses are discussed and evaluated including packaging, the travel trade, advertising, sales promotion, merchandising, and personal selling.

HTM 24100 Managerial Acct and Financial Mgmt Hospitality Operations

Class:3 Lab:0 Credit:3

Managerial and financial analyses of numerical data used for decision-making. Consideration of systems, techniques, information types, and presentational forms used by the hospitality industry.

Prereqs: MGMT 20000 with min grade of C OR HTM 14100 with min grade of C

HTM 25100 Computers in the Hospitality Industries

Class:2 Lab:2 Credit:3

Consent of Coordinator or CIS 204. Explore the applications of computers in the hospitality industry. Special emphasis is placed on those impacting the management of the organization.

Prereqs: CIS 20400 with min grade of C-

HTM 29100 Quantity Food Production and Service

Class:2 Lab:6 Credit:4

Attributes: Malpractice-Restaurant&Hotel

An introduction to food preparation methods and service techniques in quantity food settings. Students become familiar with ingredients and culinary terminology, and learn to read and evaluate menus. Recipe conversion and costing skills are developed. Different production schemes and product flow are examined, and the relationship between back-of-the-house and front-of-the-house activities is discussed.

Prereqs: FN 20300 with min grade of C OR FN 20500 with min grade of C AND HTM 19100 with min grade of C

HTM 30100 Hospitality and Tourism Industry Practicum

Class:1 Lab:0 Credit:1

Attributes: Experiential Learning, ExL-Practicum

This course requires six (6) credit hours in HTM or the consent of coordinator. Pass/Not Pass. Training and practical experience at the entry-level, totaling at least 300 hours, in an approved hospitality or tourism operation.

HTM 30200 Hospitality and Tourism Industry Practicum

Class:1 Lab:0 Credit:1

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Prereqs: HTM 30100 with min grade of C

HTM 30900 Hospitality and Tourism Management Publicity and Promotion

Class:3 Lab:0 Credit:3

Repeatable to a maximum of 6 credits. Prequisite: HTM Major and Classification 5 (Junior Standing) Written and oral skills activities focusing on the promotion of the academic major. Newsletter writing and production, public speaking events, preparation and design of academic recruitment materials and other portfolio building public relations types of activities required. Good independent study habits and research skills are developed.

HTM 31100 Procurement Management for Foodservice

Class:3 Lab:0 Credit:3

or Co-requisite: HTM 291 Identifies and describes foods, supplies, and related merchandise used in the foodservice industry. Provides methods and criteria for recognizing quality, evaluating, specifying, purchasing, and inspecting these products. Discusses the use of technology in the purchasing component of the foodservice industry.

HTM 31200 Human Resources Management for the Service Industries

Class:3 Lab:0 Credit:3

Prequisites or Co-requisites Classification 3 or higher. The principles and practices of managing human resources for effective operations of hospitality and tourism businesses will be covered including: Analysis and design work, recruiting, selections, training and development, performance management, compensation, employee relations, and strategies for supporting organizational strategies.

HTM 31400 Franchising.

Class:3 Lab:0 Credit:3

Prerequisite: Classification 5 (Junior) or better. The study of franchise administration, operations, and marketing, with a special emphasis on hospitality related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchiser relationship and unique problems in operating a franchise.

HTM 31500 Private Club Management and Operation

Class:3 Lab:0 Credit:3

A study of the organization, administration, operation, and opportunities within the private club industry with emphasis on the manager's duties.

HTM 31600 Casino Management

Class:3 Lab:0 Credit:3

All students must be 21 years of age. An overview of the development, operations and management of casino enterprises. Includes the evolution of gaming, regulatory statutes and agencies, operational concerns, marketing strategies, financial controls, security/surveillance requirements, ethical considerations, and the economic/social impact on the community. Field trip required.

HTM 32100 Equipement for Restaurants, Hotels, and Institutions

Class:3 Lab:0 Credit:3

Principles of selection, operation, and maintenance of food service equipment, including materials, structural details, design, cost, performance, and specification standards.

Prereqs: HTM 29100 with min grade of C

HTM 32200 Hospitality Facilities Management.

Class:3 Lab:0 Credit:3

Technical and managerial issues related to the operation and maintenance of the physical plant and equipment in hospitality industry facilities.

HTM 32300 Food Service Layout and Design

Class:3 Lab:0 Credit:3

Arrangement of foodservice equipment for efficient use of space. An introduction to computer aided design for equipment placement within constraints. Development of workflow patterns and other engineering considerations.

Prereqs: HTM 29100 with min grade of C AND HTM 32200 with min grade of C

HTM 33100 Hospitality and Tourism Sales and Service

Class:3 Lab:0 Credit:3

Application of sales and customer service methods used to generate revenues for hospitality and tourism businesses. Emphasis is placed on a hands-on assignment which requires students to identify a product that they will market and sell, as well as participate in a sales blitz.

HTM 34100 Cost Controls in FoodService and Lodging

Class:3 Lab:0 Credit:3

Application of cost controls; development of cost reduction methods through management policy and decisions; examination of cost control techniques for food, labor, and supplies in addition to the emphasis on beverage management control.

Prereqs: MGMT 20000 with min grade of C OR HTM 14100 with min grade of C

HTM 35200 International Cuisines and Culture

Class:1 Lab:4 Credit:3

Research in and hands-on food preparation of various international cuisines with corresponding study of their cultures and languages.

HTM 36100 Managed Services for the Foodservice Industry

Class:3 Lab:0 Credit:3

Focuses on the unique aspects of contract and institutional foodservice management as it compares to commercial foodservices; including operations in airline, business dining, school and campus, healthcare, conference and convention center, vending, correctional, and leisure foodservices.

HTM 37100 Introduction to Tourism.

Class:3 Lab:0 Credit:3

Principles, practices, and philosophies which affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry.

HTM 37200 Global Tourism Geography

Class:3 Lab:0 Credit:3

Introducation and analysis of specifc world travel destinations, including the exploration of geographic features, customs and tradition, population centers, visitor attractions, political, religious, language and other cultural differences as these relate to the hospitality and travel industry. The course is designed to teach students specific geographic knowledge, and develop a deeper understanding and empathy for cultural values and traditionsthat exist outside their own culture.

HTM 37500 Sport-Related Tourism and Leisure Managment

Class:3 Lab:0 Credit:3

NOT OPEN TO STUDENTS WITH CREDIT IN FM 375 Integration of Sport and Tourism disciplines. Sport participation and spectator travel, hard and soft adventure tourism and management of leisure time are empjasized. Focus on the dynamics behind the explosion in Sport and Adventure Tourism.

HTM 37901 Ecotourism, Sustainable Tourism Development and Conservation

Class:3 Lab:0 Credit:3

The history of ecotourism in the hospitality industry, the pros and cons of the impact of sustainable development on people, the hospitality industry, ecology and communities, and a review of recent initiatives in conservation of resources.

HTM 38100 Executive Housekeeping Management

Class:1 Lab:4 Credit:3

Management principles and practice relative to the internal maintenance of public lodging facilities. Experience in room preparation, cleanliness, tools, record, keeping and departmental organization.

HTM 38300 Resort Cruise and Entertainment Operations

Class:3 Lab:0 Credit:3

Comprehensive analysis of the operations of different styles of resorts, as well as crusie lines, gaming, and other entertainment attractions. Operating structures, systems, and managment practices are compared with traditional hotels. The resort development process is explained and alternative resorts concepts are discussed, including resort condominium and vacation/internal ownership.

HTM 38500 Educational Cruise Study

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Practicum

Note: Must be 21 years of age and have a valid passport. Exploration of the cruise line industry with a focus on hospitality and leisure management, as well as the cruise industry history and marketing operations. Includes experiential learning multi-day cruise component with land and sea lectures, tours and exposure to many languages/cultures.

HTM 39000 Undergraduate Special Problems

Class:1-6 Lab:0-4 Credit:0-6

Attributes: Variable Title

Repeatable to a maximum of six (6) credits. Credits and hours arranged. Open to HTM majors only or by consent of Instructor. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas of the hospitality or tourism field.

HTM 39100 Specialty FoodService and Catering.

Class:1 Lab:1-6 Credit:3

Exploration and creative use of specialty foods and unusual cuisine for the hospitality field. Concepts of management for the effective operation of quantity specialty food service organizations within a financial framework involving menu-planning, customer-relations, and production service logistics.

Prereqs: HTM 29100 with min grade of C

HTM 41100 Hospitality and Tourism Law

Class:3 Lab:0 Credit:3

Overview of the fundamentals legal framework that governs the conduct of hospitality and toursim managers. Topics include civil rights, contracts, court procedures, ethics, and risk management.

HTM 41900 Senior Seminar in Hopsitality and Tourism Management

Class:3 Lab:0 Credit:3

Prerequisite: Classification 7 or higher or consent of Instructor. The exploration, discussion and presentation of current research concerned with or related to the hospitality and tourism management industry.

HTM 44200 Fraud Examination For Hospitality Managers

Class:3 Lab:0 Credit:3

Fraud Examination will cover the principles and methodology of fraud detection and deterrence. The course includes such topics as skimming, cash larceny, check tampering, register disbursement schemes, billing schemes, payroll and expense reimbursement schemes, non-cash misappropriations, curruption, accounting principles and fraud, fraudulent, financial statements, and interview witnesses. The impact of the Sarbanes-Oxley Act 2002 on the Hospitality industry and issues of compliance will be addressed.

Prereqs: HTM 24100 with min grade of C OR MGMT 20100 with min grade of C

HTM 49100 Beverage Management

Class:2 Lab:0 Credit:2

Student must be minimum 21 years of age and HTM major. Principles and practices regarding the production, selection, purchasing, storage, and service of alcohol beverage in the hospitality industry. State of Indiana responsible alcohol service certification is required to earn course credit.

HTM 49101 Sales & Service For Beverage Operations

Class:2 Lab:2 Credit:3

Must be 21 years of age. Principles and practices regarding the production, selection, purchasing, storage, marketing, and service of alcoholic and non-alcoholic beverages in the hospitality industry. Includes lab component for hand-on experice. Students must acquire responsible alcohol service certification to earn course credit.

HTM 49200 Advanced FoodService Management

Class:1 Lab:7 Credit:4

Attributes: Experiential Learning, ExL-Design Projects, Malpractice-Restaurant&Hotel

Prerequisite: Classification 7 or higher. Utilize managerial skills and techniques with planning, organizing, directing and controlling a full service restaurant operation. Management teams of two to three students develop, market, and operate an international theme restaurant that is open to the public. Emphasis is placed on utilizing effective management skills to create a high quality, profitable operation with well planned systems and highly motivated, organized employees.

Prereqs: HTM 21200 with min grade of C AND HTM 29100 with min grade of C AND HTM 31100 with min grade of C AND HTM 34100 with min grade of C AND HTM 49101 with min grade of C

HTM 49900 Feasibility Studies and Business Development Hospitality

Class:3 Lab:0 Credit:3

Toursim Prerequisite: Classification 7 or higher. The study of business development. The course will cover all stages of feasibility and development activities with emphasis on strategic planning, design of systems and models and problem analysis.

Prereqs: HTM 21200 with min grade of C AND HTM 23100 with min grade of C AND HTM 24100 with min grade of C

IDIS 10001 Undergraduate Interdisciplinary Research

Class:0 Lab:0 Credit:0

Attributes: Experiential Learning, ExL-Undergraduate Research

Applied Experiential research opportunity in student's major field and one other discipline, guided by a classroom instructor. Research opportunitiy requiring 15 hours more or less of experiential research activity during the semester. Must be taken with a for credit course in the major requiring a research paper or research project.

IDIS 15001 Basic Experiential Undergraduate Research

Class:1 Lab:0 Credit:1

Attributes: Experiential Learning, ExL-Undergraduate Research

Prerequisite: Classification of 2 or higher This course is repeatable once. Applied experiential research opportunity in student major field and one other discipline, directed by a tenure-track faculty member. Requires level 1 research project presented in at least a classroom environment and requiring 15 hours of individual experiential research during the semester.

IDIS 25001 Intermediate Experiential Undergraduate Research

Class:2 Lab:0 Credit:2

Attributes: Experiential Learning, ExL-Undergraduate Research

Prerequisite: Classification of 3 or 4 This course is repeatable once. Applied experiential research opportunity in student's major field of study and one other discipline, directed by a tenure-track faculty member. Requires level 2 research project presented in a school-wide or University-wide forum and requiring 30 hours of individual experiential research during the semester.

IDIS 27000 African American Experience

Class:3 Lab:0 Credit:3

Deminsions of the African American experience, including history, education, politics, psychology, economics, religion, social organization and art will be covered.

IDIS 29000

Class:0-6 Lab:0 Credit:0-6

IDIS 33000 Introduction To Jewish Studies

Class:3 Lab:0 Credit:3

Also cross-listed as HIST 349 and POL 349. An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts from Judaism, such as God, Torah, People, Land, and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture.

IDIS 35001 Advanced Experiential Undergraduate Research

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research

Prerequisite: Classification of 5 or 6 This course can be repeated once. Applied experiential research opportunity in student's major field and one other discipline, directed by a tenured faculty member. Requires level 3 research project presented in a regional or state- wide conference setting or professional meeing or a submitted/published paper (refereed journal) and requiring 45 hours of individual experiential research during the semester.

IDIS 45001 Undergraduate/Graduate Experiential Undergraduate Research

Class:4 Lab:0 Credit:4

Attributes: Experiential Learning, ExL-Undergraduate Research

Prerequisite: Classisification of 7 or 8. This class can be repeated one time. Applied experiential research opportunity in the student's major field and one other discipline, directed by a tenured faculty member, required level 4 research project presented at a national conference or professional meeting or a submitted/published paper (refereed journal) and requiring more than 45 hour of individual or more than 90 hours of paired students' experiential research during the semester.

IDIS 49000 Directed Reding in Interdisciplinary Studies

Class:0 Lab:0 Credit:1-3

Attributes: Variable Title

Reading under the direction of the instructor in a particular field of study.

IDIS 49100 Special Topics in Interdisciplinary Studies

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Topics may vary.

IE 35600

Class:3 Lab:0 Credit:3

IE 58300

Class:3 Lab:0 Credit:3

IED 46700

Class:3 Lab:0 Credit:3

IET 10400 Industrial Organization

Class:3 Lab:0 Credit:3

A detailed survey of organizational structures; operational, financial, marketing, and accounting activities; duties of management, planning, control, personnel, safety, wages, policy, and human factors necessary for effective management.

IET 10600 Principles Of Ergonomics

Class:2 Lab:2 Credit:3

This course is designed for students interested in the areas of engineering technology, industrial/operations management, and occupational health. An understanding of how to prevent musculoskeletal disorders and improve manual working conditions will be gained through the use of applicable real life exercises and exploration of research in various industries. This course will cover a general study of the musculoskeletal system as well as guidelines for lifting, reaching, seated work, machine work, hand tools and vibration.

IET 20400 Techniques Of Maintaining Quality

Class:2-2 Lab:2-3 Credit:3

An analysis of the basic principles of quality control. Includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air and light devices for checking and measuring to determine quality levels of acceptance.

Prereqs: MA 11100 with min grade of D- AND MA 11200 with min grade of D- OR MA 14700 with min grade of D-

IET 22400 Production Planning and Control

Class:2-3 Lab:0-2 Credit:3

This course focuses on production planning, control, and service environments. Applications include the integration of concepts in operations and quantitative methods to analyze production/service situations and highlight ways of improving quality, productivity and efficiency, while meeting customer requirements. Topics include product/service design, capacity planning, process capabilities, forecasting, scheduling, and inventory management.

Prereqs: STAT 30100 with min grade of D-

IET 26400 Fundamentals of Lean Work Design

Class:2 Lab:2 Credit:3

Fundamentals of problem solving applied to methods design. Application of methods tools and work measurement. Includes time study, predetermined time systems, work sampling and computer based standard time data. This course focuses on methods design. Fundamental problem solving techniques and Lean methodology are applied to solve work methods issues and design proper work systems. Work methods tools are used to conduct macro and micro system analysis and various work measurement techniques are learned including time study, predetermined time sampling and computer based standard time data.

Prereqs: MA 14700 with min grade of D

IET 27200 Job Evaluation

Class:2-3 Lab:0 Credit:2-3

A survey of the basic principles and significance of job evaluation. An analysis of current practices and techniques used in job analysis, job descriptions, and job evaluation.

IET 27300 Principles of Quality and Process Improvement

Class:3 Lab:0 Credit:3

This course focuses on the management culture, philolophy, practices, and processes necessary to develop a total quality orientation. The course bridges quantitative, behavioral, and strategic concepts for designing organizations to be dynamic, integrated systems whose outputs are monitored for quality and constinuously improved.

IET 29900 Industrial Engineering Technology

Class:0-4 Lab:0-9 Credit:0-9

Attributes: Variable Title

(Course may be repeated for credit up to nine hours.) Hours and subject matter to be arranged by staff.

IET 30800 Engineering Project Management and Economic Analysis

Class:3 Lab:0 Credit:3

Introdcution to principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control.

IET 31000 Plant Layout And Material Handling

Class:3 Lab:0 Credit:3

Plant layout involves the design of a production system. The layout must provide for machines, work places, material handling systems, and storage in the capacities necessary so feasible schedules can be met for parts and products; auxiliary services such as offices, shipping and handling, security, maintenance, etc., must support the firm's requirements for safe and efficient production. The design of this system must possess an appropriate degree of flexibility to cope with future design change, new products, volume variations and advancing technology.

Prereqs: MET 10000 with min grade of D- AND IET 26400 with min grade of D-

IET 31100 International Quality Standards

Class:3 Lab:0 Credit:3

This course addresses what compliance with ISO and other international standards means to an organization and how an organization may attain certification. Students will gain a working understanding of standards, requirements, and methodologies of compliance. Emphasis will be on how implementation of the standards can serve as one of the building blocks of an organization's quality system.

IET 32500 Essential Logistics

Class:3 Lab:0 Credit:3

Students shall learn the elements of business objective logistics, increase of greater asset productivity, building customer loyalty and market share. Integration of real-time information technology to make production and distribution more efficient, global competition and global technology and elimination of lengthy distribution channels.

Prereqs: IET 22400 with min grade of D-

IET 35500 Statistical Process Control I

Class:3 Lab:0 Credit:3

Evaluation, analysis and installation of various procedures that comprise total quality control. Market research, product design, manufacturing planning, purchasing, production, and delivery are covered. Data analysis, quality improvement, quality design and vendor relations are included.

Prereqs: STAT 30100 with min grade of D-

IET 36500 Statistical Process Control II

Class:3 Lab:0 Credit:3

A continuation of IET 355. Product control and acceptance techniques, customer relations, and quality assurance are covered.

Prereqs: IET 35500 with min grade of D-

IET 40200 Logistics and the Global Supply Chain

Class:3 Lab:0 Credit:3

Students shall learn the elements of business objective logistics, increase of greater asset productivity, building customer loyalty and market share. Integration of real time information technology to make production and distribution more efficient, global competition and global technology and elimination of lengthy distribution channels.

Prereqs: IET 22400 with min grade of D

IET 41100 Applications of Lean and Six Sigma Methodologies

Class:3 Lab:0 Credit:3

This hands-on course focuses on emerging business practices that are geared toward making an organization more effective and efficient. Highlighted topics will include use of lean and six sigma methodologies in today's business environments. These methods are used for achieving long term profits through customer satisfaction, waste elimination and elevation of employee skills to eliminate waste and defects at the source. Application of these methods in various environments such as service, health care and manufacturing organizations will be explored. Students are expected to work in teams to apply systematic problem solving processes to solve case studies an/or real-world issues. Supporting concepts such as implementation of new business practices and culture changes will also be explored.

Prereqs: IET 27300 with min grade of D- AND IET 35500 with min grade of D-

IET 45000 Production Cost Analysis

Class:2-3 Lab:0-2 Credit:3

An introduction to financial statements and to the study of the costs of production in terms of breakeven and least cost alternatives, including present and future costs when related to time value of money, budgeting, labor and overhead, production cost control and the role of the supervisor and the engineering technologist to cost control computer applications for determining rate of return for complex problems are introduced.

IET 49500 Senior Project Survey

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Design Projects

Students will consider several projects and develop a topic for the following IET 497 course. They will develop project

scope, establish time schedules, and give a written and oral report on their proposal. Note: course should be taken no sooner that the 2nd semester before graduating.
Prereqs: OLS 33100 with min grade of D- AND IET 30800 with min grade of D-

IET 49700 Senior Project

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Hours to be arranged. Directed work on individual projects for senior industrial engineering technology students.
Prereqs: IET 49500 with min grade of D

IET 49900 Industrial Engineering Technology

Class:1-4 Lab:0-9 Credit:1-9
Attributes: Variable Title
Hours and subject matter to be arranged by staff. Course may be repeated for credit.

IET 51000 Product & Process Development Optimization

Class:3 Lab:0 Credit:3
Product and process development optimization is an efficient statistical procedure for planning a series of experiments such that the data obtained can be analyzed to yeild valid and objective conclusions. It can be used to screen a set of variables to identify those with most effect, optimize an experimental process or retrospectively analyze a set of experimental data. Both the design and analysis steps require the application of techniques for statistical data analysis. Leveling courses may be required based on student undergraduate degree.

IET 52000 Enterprise Quality Planning and Analysis

Class:3 Lab:0 Credit:3
This course provides advanced quality techniques required for improving quality, reliability and maintenance in modern business enterprises by providing essential tools. The course will focus on problem solving and team sessions with participation of students. Graduate student status or Senior with instructor approval. Leveling courses may be required based on student undergraduate degree and experience.
Prereqs: IT 50700 with min grade of C- OR IT 50800 with min grade of C-

IET 56000 Discrete Event Simulation

Class:3 Lab:0 Credit:3
This course provides students opportunity to apply discrete event system simulationto design, analyze, and improve complex systems such as business and industrial systems. Theoretical background of discrete event process simulation concepts will be covered. Topics inlcude systems concepts, modeling systems using discrete events, and modeling of various industrial and commerical systems through simulation. Theoretical topics include random variable generation, model verification and validation, statistical analusis of output, variance reduction techniques and optimization via simulation. High-level commerical simulation languages will be utilized. Students will complete and present a simulation project. Graduate student status or senior status with instructior approval. Leveling courses may be required based upon student undergraduate degree.

IET 58100 Workshop in Industrial Engineering Technology

Class:0-8 Lab:0 Credit:0-8
Attributes: Variable Title
Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education.

IET 59000 Special Problemd in Industrial Engineering Technologies

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title
Intensive individual study of selected current developments and issues in Industrical Engineering Technology. A faculty sponsor is required for this course. Does not subtiture foe either M.S. Thesis or M.S. project credit.

ISM 10200 Computer Utilization for Managment

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Technology in Society, Gen Ed-Computer Utilization, Gen Ed-

Technology in Society, General Education
An introduction to computer application software with an emphasis on use within the management area. Topics include word processing, spreadsheets, presentations, and databases, with applications targeted specifically for marketing, finance, human resource, accounting and economics.

ISM 21100 Principles Of Information Systems

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
An introduction to information systems from the perspective of a manager. This course provides an overview of information systems, systems theory, human information processing, and curent legal and ethical issues relating to computer usage. Extensive lab experiences and advanced spreadsheet and database management applications in business context are assigned.
Prereqs: MGMT 10200 with min grade of C OR ISM 10200 with min grade of C

ISM 30700 System Analys & Design

Class:2 Lab:2 Credit:3
Introduces the informatin systems students to the procedural requirements of the systems development life cycle (SDLC). A case study approach is used to introduce the student to the techniques of systems planning, analysis, form and file design, documentation, implementation and evaluation.
Prereqs: ISM 21100 with min grade of C- OR MGMT 21100 with min grade of C-

ISM 30800 Database Management Analysis And Design

Class:2 Lab:2 Credit:3
This course discusses the functions of components of database management systems and the role of databases in the System Development Life Cycle. Both relational and opbect oriented database techniques are discussed. Data modeling tools presented include enterprise models, entity relationships diagrams, the data dictionary, object diagrams and normalization techniques. Also, the role and function of the Database Administrator are addressed.

ISM 31100 Management Information Systems

Class:3 Lab:0 Credit:3
An introduction to the capabilities, limitations, and applications of computers in the business environment. Topics include information systems, hardware, software, data management, telecommunications and networking, decision support, artificial intellgence, expert systems, security, privacy, ethical issues in information systems, and impelementaion of effecitve Information Technology (IT) utilization.
Prereqs: MGMT 10200 with min grade of C- OR ISM 10200 with min grade of C-

ISM 31800 E-Business Strategy

Class:2 Lab:2 Credit:3
An overview of e-business from design to operations of organizations engaging in the fast-paced higly competitive, global environment of e-commerce. Topics include the e-business, strategic use of IT for competitive advantage, e-business impact on organization, globalization, and the impact on options created through applied IT. It is designed for students prusing leadership roles in defining IT policy and strategy.
Prereqs: MGMT 31100 with min grade of C- OR ISM 31100 with min grade of C- OR MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 32000 Advanced Spreadsheet Applications

Class:2 Lab:2 Credit:3
This course can be used as a business elective for BS in Management majors to prepare students to analyze data and solve real-life business problems, using Microsoft Excel as a tool. Moving beyond the basic point and click focus of most computer application texts, it challenges students to use critical thinking and analysis to finde efficient solutions to real-life situations. Topics include statistical anlaysis tools, data visualization and manipulation, logics in decision making, financial analysis, whit-if analyses, goal-seek tools and solver model.
Prereqs: MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 32200 E-Business Applications

Class:2 Lab:2 Credit:3

Attributes: Credit By Exam
This course can be used as a business elective for BS in Management majors. The course content takes an in-depth look at Web design concepts and techniques. The course examines theoretical concepts that make the world of Web design unique. Also this course adopts a practical hands-on approach when examining Web page styles. Along with examining different coding techniques and technologies, this course explores the advancement of Web development, as well as, E-business problem solving strategies.
Prereqs: (MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-) AND (MGMT 32400 with min grade of C- OR ISM 32400 with min grade of C-)

ISM 32500 Logistics

Class:3 Lab:0 Credit:3
This course analyzes the elements of business logistics. the course will focus on the integration of real-time information technology to increase the effectiveness of production and distribution. Global competition and technology and channels of distribution will also be discussed.

ISM 40800 Data Mining

Class:2 Lab:2 Credit:3
This course will provide the participants with understanding of the fundamental data mining methologies, and with the ability of formulating and solving problems with the. The particular attention will be paid to practcal, efficient and statistically sound techniques, capable of providing not only the requested discoveries, but also the estimates of their utility.
Prereqs: BUSM 22500 with min grade of C- AND (ISM 30800 with min grade of C- OR MGMT 30800 with min grade of C-)

ISM 41600 Information Systems Control and Audit

Class:3 Lab:0 Credit:3
The study of informatin systems (IS) control and audit IS auditing assesses whether computer systems safeguard assets, maintain data integrity, and facilitate the implementation of the goals of the organization. The reasons why companies control and audit computer systems, the nature and purposes of the information systems audit function and the overall approach to a systems audit will be studied.
Prereqs: MGMT 31100 with min grade of C- OR ISM 31100 with min grade of C- OR MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 41700 Bussiness Problem Solving With Advanced Spreadsheets

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
This course addresses the need of using advanced speadsheet application to analyze and solve business problems. This course will be offered as an elective course for MIS/CIS maors and other business major/minor students in the School of Management. It is a design project/ undergraduate research experiential course where students will learn the process of designing and implementing solutions for business problemss with speadsheets.
Prereqs: MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 41800 Knowldge Management & Business Intelligence

Class:3 Lab:0 Credit:3
This course explores the theories, strategies, methods, and tools for managing organizational knowledge and making business decisions more efficiently and effectively through utilizing intelligent Information Systems (IS) in a fast- pased, highly competitive, global environment. Topics include decision making process and modeling, decision support systems, expert systems, artificial intelligence, data mining knowledge representation and reasoning, etc.
Prereqs: MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 48300 Business Data Communications

Class:2 Lab:2 Credit:3
This course can be used as a business elective for BS in management majors. It introduces the subject of data communication and the use of telecommunication in business applications. Topics include client-server architecture, network hardware and software, distributed computing, key issues in telecommunication and network management,

and the fundamentals of data communications. In addition to this coursecovers both legacy networks and modern high-speed networks used in business communications.
Prereqs: MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 48600 Project Management

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The application of the knowledge, skills, and techniques that project managers use to manage projects. Emphasis is placed on learning and applying concepts of Project Managment Body of Knowledge (PMBOK), which includes integration, scope, time, cost, quality, human resources, communication, and procurement aspects.
Prereqs: MGMT 31100 with min grade of C- OR ISM 31100 with min grade of C- OR MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-

ISM 48700 Knowledge & Decision Management

Class:3 Lab:0 Credit:3
This course explores the application of Decision Support Systems (DSS), Expert Systems (ES), and Knowledge Management Systems (KMS) to a company's strategic decision-making process. Topics include the decision-making process, decision contexts and types, expert system opportunities, knowledge management, and the roles of decision-making tools.
Prereqs: MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C- OR MGMT 31100 with min grade of C- OR ISM 31100 with min grade of C-

ISM 48801 E-Auction In Practice

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The course will cover fundamentals of e-Auction and exchange instruments and provide an immersion experience via projects and classroom experiments designed to provide experiential learning and using case studies and hands-on online store practice.
Prereqs: (MGMT 21100 with min grade of C- OR ISM 21100 with min grade of C-) AND (MGMT 31100 with min grade of C- OR ISM 31100 with min grade of C-)

ISM 48901 Enterprise Resource Planning Implementation

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
This class studies the types of issues that managers will need to consider in implementing cross-functional integrated enterprise systems. The object of this course is to make student aware of the potential and limitations of enterprise resource planning implementation. This objective will be reached through case studies, lectures, guest speakers, and a real-world project.
Prereqs: CIS 25200 with min grade of C OR MGMT 30700 with min grade of C OR ISM 30700 with min grade of C

ISM 49500 Internship in Management Information Systems

Class:0 Lab:0 Credit:0-4
Attributes: Experiential Learning, ExL-Internship, Variable Title
A special course in selected areas of management information systems, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization.

ISM 49900 Undergraduate Research in Management Information Systems

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning research techniques in management. Durning this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance.

IT 50700 Measurement and Evaluation in Industry and Technology

Class:3 Lab:0 Credit:3

An introducation to measurement strategies in industrial, technical, and human resource development environments. The evaluation of measurement outcomes will be the primary focus of the course.

IT 50800 Quality and Productivity In Industry and Technology

Class:3 Lab:0 Credit:3

Examines the contemporary issues of continuous improvements in quality and productivity in manufacturing and service industries. Includes a close examination of the evolving philosophies bearing on the scope, improvement, and cost of quality assurance programs in industry and technology.

IT 53500 Global Supply Chain Management

Class:3 Lab:0 Credit:3

The objective of this course is to provide in-depth knowledge of global supply chain management and its application in industries. This course explores supply chain management, expanding beyond the linkage between producer and distributor to include other enterprises in the product life cycle, beginning with concept design and ending in disposal. Learning methodologies include lecture, case study and collaborative student group activities in applied research.

IT 57100 Project Management in Industry and Technology

Class:3 Lab:0 Credit:3

The factors influencing decisions during the initiation, implementation and termination of industrial and manufacturing projects are examined. Students work as project teams, using project management tools to develop implementation strategies.

ITAL 10100 Italian Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1
Introduction to Italian.

ITAL 10200 Italian Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2
Continuation of ITAL 101 (Italian Level I)
Prereqs: ITAL 10100 with min grade of D-

ITAL 20100 Italian 201 - Level III

Class:3 Lab:0 Credit:3

This course is an elective for students in the University schools and departments who wish to choose Itaian in order to meet the mandated two years language requirements. It forms the basis of a four semester sequence to deepen the mastery of another language as well as the foundation for additional knowledge of the business, cultural and literary practices of Italy.

Prereqs: ITAL 10200 with min grade of D-

ITAL 20200 Italian Level IV

Class:3 Lab:0 Credit:3

This course offers another choice in order to fulfill the foreign language requirements as well as providing the community with additional educational options.

Prereqs: ITAL 20100 with min grade of D-

ITS 10000 Information Technology Fundamentals

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Freshman Experience, Gen Ed-Wellness Education, Gen Ed-Technology in Society, Gen Ed-Technology in Society, Gen Ed-Univ/Personal Resources

This is the freshman experience course that also covers pervasive themes in IT, organization issues and history of IT, IT and its related informing disciplines, application domains, computer math and other IT topics.

ITS 11000 Web Systems Technology

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education

This course covers web technologies, information architecture, digital media, web development, vulnerabilities, social software and other topics.

ITS 12000 Information Technology Interaction

Class:2 Lab:2 Credit:3

This course covers human factors, HCI aspects of application domains, human-centered evaluation, developing effective interfaces, accessibility, emerging technologies, human-centered software and other topics.

ITS 13000 Platform Technologies

Class:2 Lab:2 Credit:3

This course covers architecture and organization, computer infrastructure, enterprise deployment software, firmware, hardware and other topics.

ITS 13500 Operating Systems Technologies

Class:2 Lab:2 Credit:3

This course covers operating systems concepts, applications, administrative activities, installation, customization, maintenance, security and other topics.

ITS 14000 Introducation to Programming Methods

Class:2-3 Lab:0-2 Credit:3

Introduction to computer algorithms and logic. This course covers introduction concepts of information technology computer programming. Topics includ algorithm development, programming logic, evaluating software programs, developing software through a variety of tools, and analysis/ development of software specifications. Extensive laboratory assignments are assigned.

ITS 17000 Network Technologies

Class:2 Lab:2 Credit:3

This course covers routing and switching, physical layer, foundation of networking, security, application considerations, network management and other topics.

ITS 19900 Topics in Information Technology I

Class:0-4 Lab:0-4 Credit:1-4

Attributes: Variable Title

This course covers topics in information technology or security topics.

ITS 20000 Ethical and Legal Issues IT

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Technology in Society, Gen Ed-Technology in Society, General Education

This course covers professional communications, social context of computing, teamwork concepts and issues, intellectual properties, legal issues in computing, organization context, professional and ethical issues, responsibilities, privacy and civil liberties and other topics.

ITS 24000 Programming Fundamentals

Class:2 Lab:2 Credit:3

This course covers fundamental data structures, fundamental programming constructs, object-oriented programming, algorithms and problem solving, event-driven programming, recursion and other topics.

Prereqs: MA 20500 with min grade of C- AND ITS 14000 with min grade of C-

ITS 24500 Integrative Programming

Class:2 Lab:2 Credit:3

This course covers scripting techniques, integrative coding, overview of program languages, software security practices, data mapping and exchange, emerging technologies, intersystem communication, and other topics.

Prereqs: ITS 24000 with min grade of C-

ITS 25000 Fundamentals of Information Assurance

Class:2 Lab:2 Credit:3

This course covers security mechanisms, fundamental aspects, operational issues, policy, attacks, security domains, forensics, information states, security services, threat analysis, vulnerabliities, and other topics.

Prereqs: ITS 13500 with min grade of C- AND ITS 17000 with min grade of C-

ITS 26000 Applied Database Technologies

Class:2 Lab:2 Credit:3

This course covers database query languages, information management concepts and fundamentals, data organization, data modeling, managing the database environment, special purpose databases, and other topics.

Prereqs: ITS 24000 with min grade of C-

ITS 27000 Internetworking Technologies

Class:2 Lab:2 Credit:3

This course covers requirements, acquisition/sourcing, integration, project management, testing and quality assurance, organizational context, architecture and other topics.

Prereqs: ITS 17000 with min grade of C-

ITS 29900 Topics in Information Technology II

Class:0-4 Lab:0-4 Credit:1-4

Attributes: Variable Title

This course covers topics in information technology or security topics.

ITS 30000 Simulation and Game Development I

Class:2 Lab:2 Credit:3

This course covers the concepts, methods and techniques of simulation and game development programming. This course focuses on the mathematics, related to game development, game and simulation programming techniques, algorithm design, data structures, game-specific software development, as well as the technical aspects of game testing. Extensive laboratory exercises are assigned.

Prereqs: ITS 24500 with min grade of C-

ITS 33000 Advanced Operating Systems

Class:2-3 Lab:0-2 Credit:3

This course covers the comparison and contrast of operating systems, the detailed examination of architecture, customization and implementation of the features of specific operating systems. Extensive laboratory exercises are assigned.

Prereqs: ITS 24500 with min grade of C-

ITS 34000 Advanced Programming

Class:2 Lab:2 Credit:3

This course covers advanced topics in programming languages, GUI development, threaded applications, components, testing and debugging, methods and advanced topics in event-driven and object oriented programming techniques. Extenstive laboratory exercises are assigned.

Prereqs: ITS 24500 with min grade of C-

ITS 35000 Systems Assurance

Class:2 Lab:2 Credit:3

This course covers the implementation of systems assurance with computing systems. Topics include confidentiality, integrity, authentication, non-repudiation intrusion detection, physical security, and encryption. Extensive laboratory exercises are assigned.

Prereqs: ITS 25000 with min grade of C-

ITS 35200 Disaster Recovery and Planning

Class:2 Lab:2 Credit:3

This course covers risk management and business continuity. Topics include disaster recovery strategies, mitigation strategies, risk analysis, and development of contingency plans for unexpected outages and component failures. Extensive laboratory exercises are assigned.

Prereqs: ITS 35000 with min grade of C-

ITS 35400 Information Assurance Risk Assessment

Class:2 Lab:2 Credit:3

This course covers industry and government requirements and guidelines for information assurance and auditing of computing systems. Topics include risk assessment and implementation of standardized requirements and guidelines.
Prereqs: ITS 35000 with min grade of C-

ITS 35600 Securing Wireless Systems

Class:2 Lab:2 Credit:3
This course covers the implementation of secure wireless systems and computing systems. Topics, intrusion detection, physical security, communications security, and encryption with wireless systems. Extensive laboratory exercises are assigned.
Prereqs: ITS 25000 with min grade of C-

ITS 36000 Distributed Application Architecture and Design

Class:2 Lab:2 Credit:3
This course covers the application development life cycle, modeling techniques, software architecture, design patterns, best practices, and development strategies. Extensive laboratory exercises are assigned.
Prereqs: ITS 26000 with min grade of C-

ITS 36200 Distributed Application Development

Class:2 Lab:2 Credit:3
This course is a project oriented course in multi-tier application development, interface design and implementation, component based application development, and configuration of multi-tier applications. Extensive laboratory exercises are assigned.
Prereqs: ITS 36000 with min grade of C-

ITS 36400 Database Modeling and Implementation

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
This is an advanced course that covers the design of distributed databases, data modeling, normalization rules, query languages, layout and design of forms, transaction management, and implementation of the database design. Extensive laboratory exercises are assigned.
Prereqs: ITS 36000 with min grade of C-

ITS 37000 Datacommunications and Networking

Class:3 Lab:0 Credit:3
This course covers the configuration of networks and communication conduits, error detection and correction, media, and the open system model.
Prereqs: ITS 27000 with min grade of C-

ITS 37200 System Administration and Management

Class:2 Lab:2 Credit:3
This course covers system performance analysis, benchmarking, acceptance testing, security strategies, file systems analysis, auditing, server roles, and best practices Extensive laboratory exercises are assigned.
Prereqs: ITS 27000 with min grade of C-

ITS 39900 Topics in Information Technology III

Class:0-4 Lab:0-4 Credit:1-4
Attributes: Variable Title
This course covers topics in Information Technology or Security topics.

ITS 40000 Simulation & Game Development II

Class:2 Lab:2 Credit:3
This course is a continuation of ITS 30000 covering advanced technical aspects of simulation and game development including technology synthesis, system architectures for real-time game and simulation, network, data driven systems, and artifical intelligence. Extenstive laboratory exercises are assigned.
Prereqs: ITS 30000 with min grade of C-

ITS 40400 System Modeling and Simulation

Class:2 Lab:2 Credit:3

This course details topics on modeling and simulation, real-time systems, rendering engines, gaming engines, gaming logic, and interactivity. It addresses a detailed study of how games function to create experiences, including rule design, play mechanics, game balancing, social game interaction, and the integration of visual, audio, tactile textural elements into total game experience.

Prereqs: ITS 40000 with min grade of C-

ITS 40900 Topics in Simulation and Game Development

Class:3 Lab:0 Credit:3

This course covers special topics and emerging technologies in Simulation and Game development.

Prereqs: ITS 40400 with min grade of C-

ITS 43000 Systems Programming

Class:2 Lab:2 Credit:3

This course covers multiple platform scritpting tools and script development for customization of systems features, batch operations, and automated system management. Extensive laboratory exercises are assigned.

Prereqs: ITS 34000 with min grade of C-

ITS 45000 Software Assurance

Class:2 Lab:2 Credit:3

This course covers defensive programming techniques, bounds analysis, error handling, advanced testing techniques, detailed code auditing, software specification in a trusted assured environment. Extensive laboratory exercises are assigned.

Prereqs: ITS 34000 with min grade of D-

ITS 45200 Computer Forensics

Class:2 Lab:2 Credit:3

This course covers the techniques used in the forensic analysis of computerized systems for gathering evidence to detail how a system has been exploited or used. Extensive laboratory exercises are assigned.

Prereqs: ITS 35400 with min grade of C-

ITS 45400 Assured Systems Design and Implementation

Class:2 Lab:2 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research

This course covers the design and implementation of assured systems in an enterprise environment. Topics include hardening of operating systems, choice of platforms, design criteria within the assured system domain. Extensive laboratory exercises are assigned.

Prereqs: ITS 45000 with min grade of C- OR ITS 45200 with min grade of C-

ITS 45900 Topics in Information Assurance and Security

Class:3 Lab:0 Credit:3

This course covers special topics and emerging technologies in information assurance and security.

Prereqs: ITS 45000 with min grade of C- AND ITS 45200 with min grade of C-

ITS 46000 Distribution Application Configuration and Management

Class:2 Lab:2 Credit:3

This course covers application deployment techniques, life cycle management, performance testing and tuning, maintenance, and quality assurance. Extensive laboratory exercises are assigned.

Prereqs: ITS 36200 with min grade of C- AND ITS 36400 with min grade of C-

ITS 46200 Application Integration

Class:2 Lab:2 Credit:3

This course covers service oriented computing, integration of disparate enterprise applications, and implementing interfaces between platforms and applications. Extensive laboratory exercises are assigned.

Prereqs: ITS 36200 with min grade of C- AND ITS 36400 with min grade of C-

ITS 46900 Topics in Distriputed Enterprise Application

Class:3 Lab:0 Credit:3
This course covers special topics and emerging technologies in distributed enterprise applications
Prereqs: ITS 46000 with min grade of C-

ITS 47000 Large Scale High Performance Systems

Class:3 Lab:0 Credit:3
This course covers the configuration of networks and communication conduits, error detection and correction, media, and the open system model. Extensive laboratory exercises are assigned.
Prereqs: ITS 37000 with min grade of C- AND ITS 37200 with min grade of C-

ITS 47200 Network Design and Implementation

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
This course covers the design and implementation of enterprise level networks. Topics include network topologies, protocols, technologies, services, design and architecture and implementaion of the network design. Extensive laboratory exercises are assigned.
Prereqs: ITS 47000 with min grade of C-

ITS 47900 Topics in Networking

Class:3 Lab:0 Credit:3
This course covers special topics and emerging technologies in networking.
Prereqs: ITS 47000 with min grade of C-

ITS 48000 IT Project Development and Management

Class:3 Lab:0 Credit:3
This course covers the planning, design, selection, and project management of information technology systems. This course contains the development of requirements, configuration of hardware and software, management of the procurement and implementation process, performance requirements, contract negotiation, and legal issues within a comprehensive project.
Prereqs: ITS 35000 with min grade of C- OR ITS 36000 with min grade of C- OR ITS 37000 with min grade of C- OR ITS 37200 with min grade of C-

ITS 49000 Senior Project/Undergraduate Research

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
This capstone course brings together the different domains of Information Technology. This course contains topics of distributed application development, networking, information assurance and security that integrate around and an unconstrained problrm of substantial complexity with an undefined solution and the implementation of the design solution.
Prereqs: ITS 45900 with min grade of C- OR ITS 46900 with min grade of C- OR ITS 47900 with min grade of C-

ITS 49900 Topics in Information Technology IV

Class:0-4 Lab:0-4 Credit:1-4
Attributes: Variable Title
This course covers topics in information technology or security topics.

ITS 55000 Biometrics For Cyber Security

Class:3 Lab:0 Credit:3
This course will cover the fundamental concepts and design implications required to implement biometric systems. Key approaches and machine learning techniques specific to vision based, speech based and behavioral based biometric systems will be discussed. Biometric system performance evaluation and issues related to security and privacy will also be addressed. Permission of Instructor is required.

ITS 55200 Digital Forensic Techniques

Class:3 Lab: Credit:3
Identifying, preserving and extracting electronics evidence from computers, networks, and mobile devices. Students learn how to examine and recover data from digital information systems, core forensic procedures for any operating or

file system, understanding technical issues in acquiring evidence and how to conduct forensically sound examinations to preserve evidence for admission and use in legal proceedings.

ITS 55400 Intrusion Detection And Prevention Systems

Class:3 Lab:0 Credit:3

This course will cover the fundamental concepts and design implications required to develop and implement intrusion detection and prevention systems that address security violations in computer systems. Topics to be covered include: main classes of attacks against computer systems, taxonomy and architecture of intrusion detection and prevention systems, network traffic analysis and feature extraction algorithms, signature and anomaly based techniques, key heuristic based and machine learning based techniques and algorithms for intrusion detection. Intrusion detection and prevention systems performance evaluation and issues related to security and defense in depth will also be addressed. Note: Leveling courses may be required based on undergraduate degree. Graduate or Senior status with instructor approval required.

ITS 56000 Database Management Security

Class:3 Lab:0 Credit:3

This seminar course covers the concepts of security as it applies to data and database security, including auditing methods using Oracle and SQL server. The course is an approriate entry-level graduate course for interdisciplinary students. Students should have taken mid-level database security, and programming classes as an undergraduate.

ITS 56200 Database Administration

Class:3 Lab: Credit:3

This seminar course covers the concepts of database administration, including topics such as architecture, advanced data management, and performance monitoring. The course is an appropriate entry-level graduate course for interdisciplinary students. Students should have taken mid-level database and programming classes as an undergraduate.

ITS 56400 Datawarehousing and Business Intelligence

Class:3 Lab:0 Credit:3

This semester course covers datawarehousing and business intelligence concepts with an emphasis on dimensional modeling as it applies to business intelligence. The course is an appropriate entry-level graduate course for the interdisciplinary students. Students should have taken mid-level database and programming classes as an undergraduate.

ITS 56600 Database Object-Oriented Modeling and Architecture

Class:3 Lab:0 Credit:3

This seminar course covers the concepts of database modeling and architecture including topics as relational modeling, advanced object-oriented modeling and object persistence. Graduate student standing or senior status with consent of instructor. Graduate students without an ITS background may be required to take additional leveling courses.

ITS 56800 Database Application Integration

Class:3 Lab:0 Credit:3

This seminar course covers the concepts of database application and integration including topics as transactional processing, data integrity and integration with the web. Graduate student standing or senior status with the consent of instructor. Graduate students without an ITS background may be required to take additional leveling courses.

ITS 58100 Workshop in Computer Inforamton Technology

Class:0-8 Lab:0 Credit:0-8

Attributes: Variable Title

Advanced study of technical and professional topics. Emphasis is on new development felating to technical, operational and training aspects of industry and technology education. Permission of instructor required.

ITS 59000 Special Problems in Computer Information Technology

Class:1-6 Lab:0 Credit:1-6

Attributes: Variable Title

Intensive individual study of selected current development and issues in Computer Informatoin Technology. A faculty sponsor is required for this course. Does not substitute for either M.S. thesis or M.S. project credit. Permission of instructor is required.

JPNS 10100 Japanese Level I

Class:3 Lab:1-2 Credit:3-4
Attributes: Foreign Language 1
A basic study of standard Japanese. Students will be introduced to spoken and written forms of the language from the beginning. Language form and use are emphasized, along with relevant cultural aspects. Hiragana and Katakana.

JPNS 10200 Japanese Level II

Class:3 Lab:1-2 Credit:3-4
Attributes: Foreign Language 2
A continuation of the study of elementary Japanese. Task-oriented activities will be incorporated to encourage language use as well as pattern practice for linguistic accuracy. Relevant cultural aspects will be included. 50 Kanji.
Prereqs: JPNS 10100 with min grade of C-

JPNS 20100 Japanese Level III

Class:3 Lab:1-2 Credit:3-4
Attributes: Foreign Language 3
A study of intermediate Japanese. Occasional use of authentic materials for listening and reading practice. Task-oriented exercises, communicative activities, and pattern practice are used to facilitate learning of the spoken and written language. 60 Kanji.
Prereqs: JPNS 10200 with min grade of C-

JPNS 20200 Japanese Level IV

Class:3 Lab:1-2 Credit:3-4
Attributes: Foreign Language 4
A continuation of intermediate Japanese. Active use of authentic materials for listening and reading practice. Task-oriented activities, communicative activities, and pattern practice are used to facilitate learning of the spoken and written language. 60 Kanji.
Prereqs: JPNS 20100 with min grade of C-

LAS 20100 The Hispanic American Experience

Class:3 Lab:0 Credit:3
Dimensions of the Hispanic American, including history, education, politics, psychology, economics, religion social organization and art are topics covered in this course.

LAS 27100 Latin America to 1824

Class:3 Lab:0 Credit:3
A survey of Latin American history from its origins to the end of the major movements toward independence, with emphasis on discovery, colonization, expansion, and the transfer of institutions from Spain and Portugal.

LAS 27200 Latin American Since 1824

Class:3 Lab:0 Credit:3
A survey of Latin American History from independence to the present with particular attention on political, economic, social problems connected with modernization.

LAS 33000 US and Latin America

Class:3 Lab:0 Credit:3
This course will explore political, economic and social aspects of relations between the United States and various Latin American Nations from independence to the present.

LAS 34000 Latin American Population Issues

Class:3 Lab:0 Credit:3
Explores demographic changes and migration trends relating to Latin America. Topics addressed will include internal and external migration, birth rates and international population policy.

LAS 37300 The Caribbean

Class:3 Lab:0 Credit:3

Will explore various topics and issues unique to the Caribbean. Emphasis will be placed on European and African influence on the complex nature of Caribbean history, languages, literature, societies and cultures. Students may take the course for credit in either Latin American Studies or History, but not both.

LAS 37600 Latin American Cinema

Class:2 Lab:2 Credit:3

A study of flims produced in Latin America or addressing Latin American topics/issues. Students will engage in critical analysis of the films, and expect to develop greater understanding of the social context of subjects introduced. May include documentaries or feature films. Approximately 2 hours each week will be devoted to viewing films and 2 hours to class lecture/discussion.

LAS 37700 Latino/Hispanic Cinema

Class:2 Lab:2 Credit:3

A study of films produced by Hispanic-Americans and/or depicting the Hispanic American experience. Students will engage in critical analysis of the films and expect to develop greater understanding of the social context of subjects introduced. May include documentaries of feature films. Approximately two hours each week will be devoted to viewing films, and two hours to class lecture/discussion.

LAS 39000 Latin American Themes of Culture, Politics and Economy

Class:3 Lab:0 Credit:3

Topics addressed will include general themes of culture and political economy in Latin America.

LAS 45000 Hispanic Heritage of the Calumet Region

Class:3 Lab:0 Credit:3

An exploration of the history of Hispanic immigration into the Calumet Region. The course will include an examination of cultural diversity, politics, community organizations, and contributions of local Hispanic-Americans.

LAS 47200 History of Mexico

Class:3 Lab:0 Credit:3

A history of the Mexican people from the pre-Columbian period to the present. Special emphasis is placed on the successful social revolutions that led to the development of today's dynamic nation.

LAS 48000 Practicum in Latin American Studies

Class:1-3 Lab:0 Credit:1-3

This course is designed to offer students credit for field experience in Latin American Studies. Work may include study abroad, community service or research. May be repeated for additional credit.

LAS 49000 Topics in Latin American Studies

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Special topics course designed to address various subjects. This course may be repeated for credit. Variable title.

LATN 10100

Class:3 Lab:1 Credit:3

Attributes: Foreign Language 1

LATN 10200

Class:4 Lab:0 Credit:3

Attributes: Foreign Language 2

LTHN 10100 Lithuanian Level I

Class:3 Lab:1 Credit:3

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

LTHN 10200 Lithuanian Level II

Class:3 Lab:1 Credit:3

Continuation of Lithuanian 10100. This course stands as an elective for student in other University departments. The

course is a contribution to intellectual growth and development as well as a service to the community.
Prereqs: LTHN 10100 with min grade of D-

MA 02000

Class:3 Lab:0 Credit:0

MA 03000

Class:3 Lab:0 Credit:0

MA 03500

Class:3 Lab:6 Credit:0

MA 10000 An Introduction to Mathematical Sciences

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
This course is intended to: integrate freshman mathematics majors into the department, help them adjust to university life, assist them in developing their academic and intellectual capabilities; introduces them to contemporary issues in mathematics, provide an overview of the careers open to those with degrees in mathematics. This course must be taken Pass/No Pass only. Credit by exam is not available for this course.

MA 11500 Intermediate Algebra

Class:3 Lab:0 Credit:3
The purpose of this course is to strengthen and expand students' basic algebraic skills and problem-solving capabilities and to prepare them for higher mathematics courses. For the purposes of general education requirements MA 11500 is not a collegiate level mathematics course, and therefore cannot be used to satisfy the general education requirement for mathematics at Purdue University Calumet.
Prereqs: APPL with a min test score of 035

MA 13700 Mathematics For Elementary Teachers I

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education
Designed for prospective elementary school teachers. Problem solving. Numberical reasoning including self-generated and conventional algorithms. Whole and fractional number systems, elementary number theory. (At Purdue University West Lafayette, not available for credit in the School of Science.)
Prereqs: APPL with a min test score of 045

MA 13800 Mathematics For Elementary Teachers II

Class:3 Lab:0 Credit:3
Pre-requisite: MA 137 Continues the sutdy of number systems through integers, rational numbers and real numbers. Quantitative and proportional reasoning as a foundation for algebraic reasoning. Elementary statistical and probabilistic reasoning. (Not available for credit in the School of Science.)
Prereqs: MA 13700 with min grade of C-

MA 13900 Mathematics For Elementary Teachers III

Class:3 Lab:0 Credit:3
Geometric, measurement and spatial reasoning in one, two and three dimensions as the basis for elementary school geometry. Metric and non-metric geometry, transformation geometry. (At Purdue University West Lafayette, not available for credit in the School of Science.)
Prereqs: MA 13700 with min grade of C-

MA 14700 Algebra And Trigonometry For Technology

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education
NOT open to students with credit in MA 151 or 153 MA 147 and 148 is a two semester sequence in algebra and trigonometry for students in technology. The emphasis is on technique and problem solving. MA147 concentrates on topics in algebra.
Prereqs: MA 11500 with min grade of C- OR APPL with a min test score of 045

MA 14800 Algebra And Trigonometry For Technology II

Class:3 Lab:0 Credit:3

Not open to students with credit in MA 151 or MA 154. Continuation of MA 147. MA 148 concentrates on trigonometry.

Prereqs: MA 14700 with min grade of C- OR MA 15300 with min grade of C-

MA 15300 Algebra And Trigonometry I

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education, TransferIN

NOT open to students with credit in MA 14700 or14800. MA 15300 is College Algerba. The content of MA 15300 and 15400 is similar to Algebra And Trigonometry The pace and emphasis is directed to students who do not intend to take MA 16300. MA 15300 is College Algebra.

Prereqs: MA 11500 with min grade of C- OR APPL with a min test score of 045

MA 15400 Algebra And Trigonometry II

Class:3 Lab:0 Credit:3

Attributes: TransferIN

NOT open to students wit credit in MA 148 or 151. Continuation of MA 153. MA 154 is Trigonometry.

Prereqs: MA 15300 with min grade of C- OR APPL with a min test score of 060

MA 15900 Precalculus

Class:5 Lab:0 Credit:5

Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education

Algerbra and Trigonometry topics designed to prepare students for calculus.

Prereqs: MA 11500 with min grade of C- OR APPL with a min test score of 060

MA 15910 Introduction To Calculus

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education

A survey of differential and integral calculus. Applications to the agricultural, life, managerial, and social sciences.

Prereqs: MA 15300 with min grade of C- OR APPL with a min test score of 060

MA 16019 Applied Calculus I For Technology

Class:4 Lab:0 Credit:4

This course develops topics from analytical geomerty and introduces differentiation and integration.

Prereqs: MA 14800 with min grade of C- OR APPL with a min test score of 075

MA 16021 Applied Calculus II And Differential Equations

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Techniques of integration and application to technology problems such as work and fluid pressure: infinite series, convergence tests; differntial equations and initial value problems; separable differential equations, second order differential equataions; Laplace transform; Fourier series.

Prereqs: MA 21900 with min grade of C- OR MA 16019 with min grade of C-

MA 16031 Calculus I For Life Sciences

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education

This is the first course in a two-course sequence. It covers the single-variable calculus topics of value to majors in lifer sciences. Topics include functions, limits, derivatives and their applications to the life sciences, and discrete-time dynamical systems.

Prereqs: MA 15300 with min grade of C- AND MA 15400 with min grade of C- OR MA 15900 with min grade of C- OR APPL with a min test score of 075

MA 16032 Calculus II For Life Sciences

Class:3 Lab:0 Credit:3

This is the second course in a two-course sequence. Topics will include continued work with differentiation and

integration of elementary functions and their compositions, application to pure-time and autonomous differential equations, and basic probability applied to life-science problems.
Prereqs: MA 16031 with min grade of C- OR MA 22300 with min grade of C-

MA 16300 Integrated Calculus And Analytic Geometry I

Class:5 Lab:0 Credit:5
Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education, TransferIN
Topics from plane analytic geometry. Introduction to differentiation and integration. Applications.
Prereqs: MA 15900 with min grade of C- OR MA 15400 with min grade of C- OR APPL with a min test score of 085

MA 16400 Integrated Calculus And Analytic Geometry II

Class:5 Lab:0 Credit:5
Attributes: TransferIN
Continuation of MA 163. Completion of introductory study of topics in plane analytic geometry and the calculus of one variable, infinite series.
Prereqs: MA 16300 with min grade of C-

MA 20500 Discrete Mathematics for Computer Technology

Class:3 Lab:0 Credit:3
The course covers topics in discrete mathematics which are essential to the discipline of computer technology. These include: logic, sequences, mathematical introduction, basic set theory, functions, recursion, relations, graphs, and trees.
Prereqs: MA 14700 with min grade of C- OR MA 15300 with min grade of C- OR CLM with a min test score of 076

MA 23700 Advanced Topics In Mathematics For Elementary Teachers I

Class:3 Lab:0 Credit:3
Topics in algebra and functions such as axioms, algebraic notions and equations. Modeling of problems, concepts of a functiona, representaqtion of functions, and tyopes of functions (linear, quadratic, exponential, etc.) number systems, number theory, and set theory. Appropriate technologies for teaching such topics will be used.
Prereqs: MA 13700 with min grade of B OR MA 13800 with min grade of B OR MA 13900 with min grade of B

MA 23800 Advanced Topics In Mathematics for Elementary School Teacher

Class:3 Lab:0 Credit:3
II Topics in data analysis and probability such as nature and use of data, designing investigations and sampling, distinguishing between types of data, appropriate representations of data, interpretations of data, basic concepts of probability and randomness, simulations. Appropriate technologies for teaching such topics will be used.
Prereqs: MA 13700 with min grade of B AND MA 13800 with min grade of B

MA 23900 Advanced Topics IN Mathematics For Elementary School Teacher

Class:3 Lab:0 Credit:3
III Topics in proportionality, geometry and measurement such as proportional reasoning and rescaling in geometric contexts, perspective, congruence and similarity, basic feometric figures, transformations, coordinate feometry, geometric measurements in multiple dimensions, constructions, proof and argumentation. Appropriate technologies for teaching such topics will be used.
Prereqs: MA 13700 with min grade of B AND MA 13900 with min grade of B

MA 26100 Multivariate Calculus

Class:4 Lab:0 Credit:4
Solid analytic geometry, partial differentiation, multiple integrals.
Prereqs: MA 16400 with min grade of C-

MA 26400 Differential Equations

Class:3 Lab:0 Credit:3
Not open to students with credit in MA 262 A first course in ordinary differential equations. First order differential equations, linear and nonlinear systems of differential equations, and second order differential equations.
Prereqs: MA 26100 with min grade of C-

MA 26500 Linear Algebra

Class:3 Lab:0 Credit:3
Not open to students with credit in MA 262 An introduction to linear algebra. Systems of linear equations, matrix algebra, vector spaces, determinants, eigenvalues, eigenvectors, diagonalization of matrices, applications.
Prereqs: MA 16400 with min grade of C-

MA 30303 Internship in Mathematical Sciences

Class: Lab: Credit:1-3
Attributes: Experiential Learning, ExL-Internship
Directed in-service experience with enployees that may include but not limited to government agencies, private industry, and community organizations. Permission of department required.

MA 31200 Probability

Class:3 Lab:0 Credit:3
A calculus-based introduction to probability theory and stochastic processes. Topics include probability spaces, random variables, distributions, expectation conditional probability, and discrete-state-space Markov chains.
Prereqs: MA 26100 with min grade of C-

MA 31500 Introduction To Abstract Mathematics

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
This course is a bridge from the mainly computational mathematics courses to the upper-level abstract courses. It focuses on the development of students' abilities to construct proofs, examples and counterexamples.
Prereqs: MA 26100 with min grade of C-

MA 33000 Concepts in Geometry

Class:3 Lab:0 Credit:3
Fundamental concepts in geometry. Euclidean, non-Euclidean (including spherical and hyperbolic geometry), and fractal geometry.
Prereqs: MA 26100 with min grade of C-

MA 34500 Coding And Information Theory

Class:3 Lab:0 Credit:3
An introduction to topics in coding and information theory: error-detecting and error-correcting codes, variable-length codes, decoding, entropy, information, channel capacity, Shannon's theorems, basics of algebraic coding theory.
Prereqs: MA 26500 with min grade of C-

MA 34800 Discrete Mathematics

Class:3 Lab:0 Credit:3
Completion of MA 265 with C or better required. A problem-centered introduction to topics in discrete mathematics including induction, permutations, combinations graphs, recurrence relations and generating functions.
Prereqs: MA 26500 with min grade of C-

MA 35100 Elementary Linear Algebra

Class:3 Lab:0 Credit:3
Not open to students with credit in MA 265 or 350 Systems of linear equations, finite dimensional vector spaces, matrices, determinants, applications to analytical geometry.
Prereqs: MA 26100 with min grade of C-

MA 40300 Mathematical Research

Class:1-3 Lab:0 Credit:1-3
Attributes: Experiential Learning, ExL-Undergraduate Research
Undergraduate research in the mathematical sciences under the direction of a faculty member. May be used to fulfill an experiential learning requirement. Variable credit 1-3.
Prereqs: MA 26100 with min grade of C-

MA 44600 Introduction to Real Analysis

Class:3 Lab:0 Credit:3

An introduction to basic concepts fo real analysis. Topology of the real line, sequences, series, and various forms of convergence. Applications to derivatives and integrals.
Prereqs: MA 26500 with min grade of C- AND MA 26400 with min grade of C- AND MA 31500 with min grade of C-

MA 45300 Elements Of Algebra

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Some basic properties of integers, polynomials, and fields (subfields) of the complex numbers, finite fields with emphasis on concrete examples and applications.
Prereqs: MA 26500 with min grade of C- AND MA 31500 with min grade of C-

MA 45400 Galois Theory

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Field extentions and automorphisms. .
Prereqs: MA 45300 with min grade of C-

MA 47200 Introduction to Applied Mathematics

Class:3 Lab:0 Credit:3
Completion of MA 265, MA 264 and C S 206 with a C or better. An introduction to the basic ideas and methods of applied mathematics. Topics taken from elementary partial differential equations, separation of variables and Fourier series, Fourier transforms, calculus of variations, applied linear algebra, numerical methods, modeling.
Prereqs: MA 26500 with min grade of C- AND MA 26400 with min grade of C- AND CS 20600 with min grade of C-

MA 48000 The Practicum In Applied Mathematics

Class:3 Lab:0 Credit:3
The practicum course consists of a small team (a faculty advisor and 1-4 students) working on a real problem obtained in conjunction with a local business or industry. Not more then two terms of MA 48000 and/or CS 48000 may be taken for credit. (This course is the same as CS 48000.)

MA 49000 Topics In Mathematics For Undergraduates

Class:0-5 Lab:0 Credit:1-5
Attributes: Variable Title
Supervised reading and reports in various fields. Open only to students with the consent of the department.

MA 51000 Vector Calculus

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Not open to students with credit in MA 362. Functions of several variables: partial derivative, differential; quadratic approximation, extrema; vector calculus, gradient; line, surface and volume integrals; divergence, curl, Laplacian, integral theorems; mappings, continuity, differentiability, inverse mapping; implicit functions; orthogonal coordinates.
Prereqs: MA 26400 with min grade of C- AND MA 26500 with min grade of C-

MA 51600

Class:3 Lab:0 Credit:3

MA 52000 Boundary Value Problems of Differential Equations

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Fourier series. Sturm-Liouville Theory; Orthogonal expansions, seperation of variable in partial differential equations, spherical harmonies.
Prereqs: MA 26400 with min grade of C-

MA 52100 Introduction To Optimization Problems

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Linear programming, simplex algorithm, calculus of variations, necessary and sufficient conditions of extrema.

Prereqs: MA 26500 with min grade of C-

MA 52500 Introduction To Complex Analysis

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Complex numbers and complex-valued functions; differentiation of complex functions; power series, uniform convergence; integration, contour integrals; elementary conformal mapping.
Prereqs: MA 26400 with min grade of C- AND MA 26500 with min grade of C-

MA 53200

Class:3 Lab:0 Credit:3

MA 54000 Analysis I

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Real number system, basic topology, infinite series, continuity, differentiation, integration.
Prereqs: MA 44600 with min grade of C-

MA 54100 Analysis II

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Sequences and series of functions, uniform convergence, equicontinuous families, the Stone-Weierstrass Theorem, Fourier series, introduction to Labesque measure and integration.
Prereqs: MA 54000 with min grade of C-

MA 55300 Introduction To Abstract Algebra

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Basic properties of groups, rings, integral domains, fields, polynomials Solvable groups. Finitely generated abelian groups. Algebraic and transcendental field extensions. Separable extensions. Normal extension, galois theory.
Prereqs: MA 45300 with min grade of C-

MA 55400 Linear Algebra

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Vector spaces, linear transformations, matrices. Solution of systems of linear equations. Determinant. Inner product spaces; orthogonal reduction of symmetric matrices. Direct sum decompositions, characteristic values, diagonable and nilpotent transformations, Jordan normal form.
Prereqs: MA 26500 with min grade of C-

MA 55600 Introduction To The Theory of Numbers

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Divisibility, congruences, quadratic residues, diophantine equations, the sequence of primes.
Prereqs: MA 26100 with min grade of C-

MA 56000 Fundamental Concepts Of Geometry

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Foundations of Euclidean geometry, including Euclid's elements and detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.
Prereqs: MA 26100 with min grade of C-

MA 56200

Class:3 Lab:0 Credit:3

MA 57100 Elementary Topology

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective
General topological spaces and continuity. Connectedness. Separation. Compactness. Metric spaces. Function spaces.
Prereqs: MA 44600 with min grade of C-

MA 58100 Introduction To Logic For Teachers

Class:3 Lab:0 Credit:3
Sentential and general theory of inference and nature of proof; elementary axiom systems.
Prereqs: MA 26100 with min grade of C-

MA 58300 History Of Elementary Mathematics

Class:3 Lab:0 Credit:3
A survey of elementary mathematics before calculus will be made to link the history of mathematics to that of other sciences and to the social history of the relevant periods. Some acquaintance with ancient history of Europe is desirable.

MA 58700 General Set Theory

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Set algebra. Functions and relations. Ordering relations. Transfinite induction. Cardinal and ordinal numbers. The axiom of choice. Maximal principles. The continuum hypothesis. Application to algebra, analysis and topology.
Prereqs: MA 45300 with min grade of C-

MA 59800 Topics In Mathematics

Class:0-5 Lab:0 Credit:1-5
Attributes: Variable Title
Sem 1 and 2 SS. Cr.1-5 (When offered at Indianapolis, cr.0-6. May be repeated for credit.) Supervised reading courses as well as dual-level special topics courses are given under this number.

ME 11400 Engineering Drawing

Class:1 Lab:3 Credit:2
A techanical drawing course covering geometric constructions pictoral and multiview drawing, sections, graphical vector solutions, dimensioning, detail and assembly drawings. Development of free hand sketching techniques as well as use of drafting instruments.

ME 11500 Engineering Drawing I

Class:0 Lab:3 Credit:1
A technical drawing course covering engineering geometry, orthographic projection, auxiliary views, dimensioning, and tolerance using sketching techniques, and 2-D CAD.

ME 11600 Engineering Drawing II

Class:0 Lab:3 Credit:1
A continuation of the technical drawing course covering 3-D parametic modeling, part assembly modeling, and detail and assembly drawings.
Prereqs: ME 11500 with min grade of C- OR CE 11500 with min grade of C-

ME 27100 Basic Mechanics I (Statics)

Class:3 Lab:0 Credit:3
Review of vector algebra and equilibrium. Hydrostatics, virtual work, static stability, friction. First and second moments of areas, volumes, and masses, center of gravity. A minimum grade of C is required for the course prerequisites.
Prereqs: MA 16300 with min grade of C- AND MA 16400 with min grade of C- AND PHYS 15200 with min grade of C-

ME 27500 Basic Mechanics II (Dynamics)

Class:3 Lab:0 Credit:3
Fundamental concepts, kinematics, translation and rotation. Kinetics impulse, momentum, work, energy. Rectilinear and curvilinear translation of point masses. Plane motion of rigid bodies and vibration.
Prereqs: MA 26100 with min grade of C- AND (ME 27100 with min grade of C- OR CE 27101 with min grade of C-)

ME 29100 Industrial Practice I

Class:0 Lab:0 Credit:0

For co-operative engineering students only Practice in industry and comprehensive written report of this practice.

ME 29200 Industrial Practice II

Class:0 Lab:0 Credit:0

For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 30500 General Thermodynamics I

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Properties of pure substances, work and heat, first and second laws of thermodynamics, entropy, irreversibility and availability, power and refrigeration cycles, thermodynamic relations.

Prereqs: MA 26100 with min grade of C- AND PHYS 26100 with min grade of C-

ME 30600 General Thermodynamics II

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Thermodynamic relations. Power and refrigeration cycles, methods of thermodynamic analysis, technical thermodynamics and design, energy conversion. Thermodynamics of combustion processes and equilibrium.

Prereqs: ME 30500 with min grade of D-

ME 31100 Engineering Project Management

Class:3 Lab:0 Credit:3

Introduction of principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control.

Prereqs: MA 16400 with min grade of C

ME 31200 Fluid Mechanics

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Continuum, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis, Euler and Bernoulli equations, viscous flows, boundary layer flow in channels and around submerged bodies, one-dimensional gas dynamics.

Prereqs: MA 26400 with min grade of C- AND (ME 27500 with min grade of C- OR CE 27500 with min grade of C-) AND ME 30500 with min grade of D-

ME 31300 Fluid Mechanics Laboratory

Class:0 Lab:3 Credit:1

Attributes: Engr Tech Elective

Introduction to fluid mechanics laboratory, experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, boundary layer studies, falling ball experiments, and viscosity measurements.

Prereqs: MA 26400 with min grade of C- AND ME 27500 with min grade of C- AND ME 30500 with min grade of D- AND (ME 31200 with min grade of D- OR CE 31200 with min grade of D-)

ME 32000 Kinematic Analysis And Design

Class:2 Lab:3 Credit:3

Attributes: Engr Tech Elective

Graphical, analytical, and computer techniques for analyzing displacements, velocities, and accelerations in mechanisms. Analysis and design of linkages, cams and gears. Laboratory projects include analysis, design, construction, and evaluation of mechanisms.

Prereqs: MA 26400 with min grade of C- AND (ME 11600 with min grade of C- OR CE 11600 with min grade of C-) AND ME 27500 with min grade of C-

ME 32500 Dynamics Of Physical Systems

Class:3 Lab:0 Credit:3

Development and solution of linear models; translational and rotational mechanical systems, electrical systems,

electromechanical systems, thermal systems, hydraulic systems. The Laplace transform, transfer functions, and Bode plots, state variable representation and solutions. Computer analysis and simulation.
Prereqs: ECE 20100 with min grade of C- AND ME 27500 with min grade of C- AND MA 26400 with min grade of C-

ME 34500 Mechanical Engineering Experimentation

Class:2 Lab:3 Credit:3
Attributes: Engr Tech Elective
Mechanical measurements and methods of experimentation. Calibration standards, statistical replication and error minimization, transducers and instrumentation, dimensional analysis and the design of an experiment. Laboratory experiments will require formal reports and will deal with displacements, velocities, pressures, and elastics strains.
Prereqs: CE 27300 with min grade of C- AND MA 26400 with min grade of C- AND ME 27500 with min grade of C-

ME 39300 Industrial Practice III

Class:0 Lab:0 Credit:0
For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 39400 Industrial Practice IV

Class:0 Lab:0 Credit:0
For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 39500 Industrial Practice V

Class:0 Lab:0 Credit:0
For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 40400 Finite Element Analysis

Class:2 Lab:3 Credit:3
Brief history of finite element method and ANSYS; direct formulation; minimum total potential energy formulation; verification of results; trusses. Examples using ANSYS, one-dimensional elements. Nerical integration, Gauss Quadrature. Examples of one-dimensional elements in ANSYS; heat transfer problems; solid mechanics problems; two-dimensional elements. Pre-processing with ANSYS; boundary conditions; applications; heat conduction problems; torsion problems; beams and frames. Credit is not allowed for both ME 40400 and CE 40400. This will be one of the ME electives for Mechanical Engineering students.
Prereqs: MA 26400 with min grade of C- AND MA 26500 with min grade of C- AND CE 27300 with min grade of C-

ME 41300

Class:3 Lab:0 Credit:3

ME 41600 Heat Transfer

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Steady state and transient heat transfer by conduction, laminar and turbulent convection, firm condensation and boiling, and by radiation. Combined heat and mass transfer by diffusion and convection. The analysis and design of heat exchangers for process heat transfer.
Prereqs: ME 30500 with min grade of D- AND ME 31200 with min grade of D- AND ME 31300 with min grade of D-

ME 41700 Heat Transfer Lab

Class:0 Lab:3 Credit:1
Attributes: Engr Tech Elective
Heat transmission laboratory with measurements of temperature and flows. Experiments include temperature profiles in solids, thermal conductivity.
Prereqs: ME 31300 with min grade of D-

ME 42600 Heating and Air Conditioning Analysis

Class:3 Lab:0 Credit:3
Psychometrics, air conditioning systems, equipment selection, duct design and piping design. Heating and cooling loads, solar radiation and heat transmission in buildings. Heat pumps. Application of air conditioning to residences, computer rooms, light commercial and high-rise buildings.

Prereqs: ME 41600 with min grade of D-

ME 42900 Senior Engineering Design I

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Prerequisite: Penultimate semester. The senior engineering design courses I and II constitute a two semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue a idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presenation before faculty and students.
Prereqs: ENGL 30700 with min grade of D- AND ME 30500 with min grade of D- AND ME 31100 with min grade of D- AND ME 31200 with min grade of D- AND CE 27300 with min grade of C- AND ME 32000 with min grade of D- AND ME 32500 with min grade of D- AND MSE 20000 with min grade of C-

ME 43900 Senior Engineering Design II

Class:2 Lab:3 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presenation before faculty and students.
Prereqs: ME 42900 with min grade of D-

ME 44000 Automotive Prime Movers:Green Engines and Clean Fuels

Class:2 Lab:2 Credit:3
Internal combustion engines (ICE), hybrid engines (HE), fuel-cell engines (FCE), and alternative/renewable fuels. ICEs topics-engines with advanced combustion systems such as clean diesels, direct-injection spark-ignition engines (DISI), and low-temperature combustion (LTC) compression- ignition. HE topics - different components of hybrid engines and the powertrain design. FCE topics - fundamentals of fuel cells and automotive applications. Clean fuel topics - biofuels, hydrogen, and natural gas, as well as, other cleaner fossil fuels for automotive applications. Well-to wheel energy and cost analysis of prime movers design/fuels. Course includes a laboratory component.
Prereqs: ME 30000 with min grade of D-

ME 46100 Machine Design I

Class:3 Lab:3 Credit:4
Attributes: Engr Tech Elective
Application of mechanics and mechanics of materials to the analysis and design of machine elements. Stress and deflection analysis, statistical considerations under steady and variable loading, stress principles applied to fasteners, springs, welded joints, and general machanical elements. Fits and tolerances. Antifriction Gearings. Spur gears. Laboratory includes projects, solutions of design problems, and experiments.
Prereqs: CE 27300 with min grade of C- AND ME 32000 with min grade of D-

ME 46600 Machine Design II

Class:2 Lab:3 Credit:3
Comprehensive study in the design and analysis of gearing, rolling and journal bearings, clutches and brakes, and flexible mechanical elements. Introduction to reliability engineering. Laboratory includes projects and solution of design problems.
Prereqs: ME 32000 with min grade of D- AND ME 46100 with min grade of D-

ME 48500 Linear Control Systems

Class:3 Lab:3 Credit:4
Introduction to classical control theory. Transfer functions, block diagram manipulation, and signal flow graphs. Transient and steady state responses; characteristics, and design. Sensitivity analysis and disturbance rejection. System stability. Root locus analysis and design. Frequency response analysis using Bode and polar plots. Nyquist

criterion and Nichols chat. Controller design using Bode plots. Laboratory will include design, simulation of topics covered, and a number of practical experiments. Credit is not allowed for both ECE 384 and ME 485.
Prereqs: ME 32500 with min grade of D-

ME 48600 Introduction to Manufacturing Engineering

Class:2 Lab:3 Credit:3
Modern manufacturing processes and methods including forming, shaping, machining, and joining. Productivity, quality improvement, material and energy conservation, automatic processing and inspection, process planning, manufacturing control, robotics, CAD, CAM, and computer integrated manufacturing.
Prereqs: CE 27300 with min grade of C- AND MSE 20000 with min grade of C-

ME 49500

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title

ME 49700 Mechanical Engineering Projects

Class:0-6 Lab:0-6 Credit:1-6
Attributes: Variable Title
May be repeated for credit Junior standing or higher required Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard undergraduate curriculum can be studied under the course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and prepare a brief description of the work to be undertaken in cooperation with their advisor.

ME 50000 Advanced Thermodynamics

Class:3 Lab:0 Credit:3
The empirical, physical basis of the laws of thermodynamics. Availability concepts and applications. Properties and relations between properties in homogeneous and heterogeneous systems. The criteria of equilibrium. Application to variety of systems and problems including phase and reaction equilibrium.
Prereqs: ME 30600 with min grade of B-

ME 50200 Numerical Heat And Mass Transfer

Class:3 Lab:0 Credit:3
This course is to introduce students with basic concepts and techniques in computational heat transfer and fluid dynamics, and to prepare students for development and application of computer codes for engineering design and scientific research. The topics will include finite volume methods (FVM), discrete modeling of Navier-Stokes equations and energy equations, iterative solution algorithms, grid generation, boundary conditions, convergence and accuracy, applicability and pitfalls of commercial codes, and hands-on projects.
Prereqs: ME 41600 with min grade of D- AND ME 31200 with min grade of D-

ME 50500 Intermediate Heat Transfer

Class:3 Lab:0 Credit:3
Heat and mass transfer by diffusion in one-dimensional, two-dimensional, transient, periodic, and phase change systems. Convective heat transfer for external and internal flows. Similarity and integral solution methods. Heat, mass, and momentum analogies. Turbulence. Buoyancy driven flows. Convection with phase change. Radiation exchange between surfaces and radiation transfer in absorbing-emitting media. Multimode heat transfer problems.
Prereqs: ME 41600 with min grade of B-

ME 51300 Engineering Acoustics

Class:3 Lab:0 Credit:3
Senior standing or consent of instructor required The simple oscillator. Lumped acoustical elements. Electro-mechanical-acoustical analogies. Wave motion in strings and membranes. Introduction to linear acoustics through derivation of the wave equation and simple solutions. Plane and spherical waves. Acoustic intensity. Plane wave transmission through fluid layers and simple barriers. Sound absorption. Modeling of acoustical sources: monopoles, dipoles, quadrupoles. Mechanisms of sound generations and directionality. Sound propagation in one-dimensional systems. Introduction to room acoustics. Professirs Bolton and Mongeau.

ME 51500 Quality Control

Class:3 Lab:0 Credit:3

This course examines the design in order to acquire a better product/process quality. Other aspects of design included are robust design, parameter design, or Taguchi Techniques. This course also gives students a current understanding of the techniques and applications of design of experiments in quality engineering design. The students will learn design of quality control systems in manufacturing, use of advanced statistical process controls, sampling inspection techniques, process capabiliy and other statistical tools. Also included are vendor sourcing and control tools methods for establishing specifications and tolerances, quality function deployment, and other quality control techniques. In addition, Six Sigma will be included The course is aimed primarily to engineering graduate students interested in project management. Basic Statistics is a course prerequiste.

ME 51600 Advance Engineering Project Mangement

Class:3 Lab:0 Credit:3

Overview and concepts of project management (principles, body of knowledge, stragegies): planning successful projects (defining, specifying, deliver options, scheduling, budgeting); implementing (organizing the team, work assignments, team building, team launch, effective leadership); risk analysis; executing (performance measurement, maintaining the schedule, adjustiments/mid- course corrections, record keeping, status reporting, communications managing conflict, time management). The course is aimed primarily to engineering graduate students interested in project management.

Prereqs: ME 3100 with min grade of C- OR ECE 31200 with min grade of C-

ME 51900 Intro To Wind Energy

Class:3 Lab:0 Credit:3

This course is intended fro the undergraduate and graduate engineer or scientist who is interested in the wind energy technology; introduce the students to the technology and economics of converting wind energy to electricity and the environmental concerns of wind energy. Topics include; Introduction to renewable energy; Wind Characterristics; Wind Resource Estimation; Wind Turbine Aerodynamics; Wind Energy System Economics; Wind Turbine Siting and Environmental Aspect and Impact.

Prereqs: ME 31200 with min grade of D-

ME 52100 Air Quality Modeling

Class:3 Lab:0 Credit:3

This course is intended for the undergraduae and graduate engineer or scientist who is interested in the modeling of air pollution: the basic concepts of air quality and air pollution modeling; overview of practical and advanced approaches to air pollution modeling; evaluation and applications to air pollution related modeling. In order to obtain acurate assessments and forecasts of the effects of air contaminant dispersion, modeling based on solution of the nonlinear equations of fluid motion using Computational Fluid Dynamics (CFD) is a good choice. In this course problems of engineering interest will be examined, related to both indoor and outdoor contaminant dispersion. Some of the homeowrk problems will require use of a CFD code - several source codes will be provided as well as access to commercial CFD codes.

Prereqs: ME 31200 with min grade of D-

ME 52300 Electronics System Cooling

Class:3 Lab:0 Credit:3

This is an introduction to thermal analysis and management of electronic eqiopment with focus on cooling of electronic devices. The emphasis of this course is on the application of fundamental heat transfer principles to predict thermal load, temperature distribution, and hot-spot in electronics. Topics include: Introductioon to various modes of heat transfer; Fins and heat sinks-design, analysis, and optimization; thermoelectric and refrigeration cooling; nanofluids, liquid cooling, boiling heat transfer and phase change thermal storage system, heat pipes, Analysis and design studies for chip modules, printed circuit boards, and trend in thermal packaging. The course is aimed primarily to ME graduate studens specializing in thermal and fluid science area.

Prereqs: ME 41600 with min grade of C-

ME 52400 Design and Analysis-Heating, Ventilation, & Air Conditioning

Class:3 Lab:0 Credit:3

This couse is an introduction to analysis and design of HVAC&R system. The emphasis is on the application of fundamental heat transfer and fluid mechanics principles to analyze HVAC systems. The topics covered includes:

Introduction and basic concepts, Psychometrics, air conditioning systems, equipment selection, duct design and piping design. Heating and cooling loads, solar radiation and heat transmission in buildings. Heat pumps. Application of air conditioning to residence, computer rooms, light commercial and high-rise buildings. This course is aimed primarily to ME graduate students specializing in thermal and fluid science area.
Prereqs: ME 41600 with min grade of C-

ME 53200 Statistical Concepts in Engineering

Class:3 Lab:0 Credit:3
In today's environment, there is an ever- increasing need to develop and produce systems that are robust, reliable, high quality, supportable, cost-effective, and responsive to the needs of the customer or user. Reflecting these worldwide trends, System Engineering course introduces students to the full range of system engineering concepts, tools, and techniques, emphasizing the application of principles and concepts of system engineering and the way these principles aid in the development, utilization, and support of systems. The course covers systems engineering from both a technical and management perspective. The course is aimed primarily to engineering graduate students interested in project management.

ME 53400 System Engineering

Class:3 Lab:0 Credit:3
In today's environment, there is an ever- increasing need to develop and produce systems that are robust, reliable, high quality, supportable, cost-effective, and responsive to the needs of the customer or user. Reflecting these worldwide trends, course introduces students to the full range of system engineering concepts, tools, and techniques, emphasizing the application of principles and concepts of system engineering and the way these principles aid in the development, utilization, and support of systems. The course covers systems engineering from both a technical and management perspective. The course is aimed primarily to engineering graduate students interested in project management.

ME 54300 Advanced Engineering Economics

Class:3 Lab:0 Credit:3
Effective project managers have complete command of their project costs and a thorough understanding of the financial aspects of their business. This course reviews the fundamentals of accounting; examines project cost accounting principles, applications, and impact on profitability; examines the principles of project costing; covers the elements involved in cask management; introduces the framework for how projects are financed and the potential impact financing has on the projects; and a framework for using an effective project cost system. The course is aimed primarily to engineering graduate students interested in project management.
Prereqs: ME 31100 with min grade of C OR ECE 31200 with min grade of C

ME 55900

Class:3 Lab:0 Credit:3

ME 56000 Kinematics

Class:3 Lab:0 Credit:3
Geometry of constrained plane motion with applications to linkage design. Type and number synthesis. Path curvature, inflection circle, cubic of stationary curvature. Finite displacements, three and four separated positions. Graphical, analytical, and computer techniques.
Prereqs: ME 32000 with min grade of B-

ME 56300 Mechanical Vibrations

Class:3 Lab:0 Credit:3
Review of system with one degree of freedom. LaGrange's equations of motion for multiple degree of freedom systems. Introduction to matrix methods. Transfer functions for harmonic response, impulse response, and step response. Convolution integrals for response to arbitrary inputs. Principle frequencies and modes. Applications to critical speeds, measuring instruments, isolation, torsional systems. Introduction to nonlinear problems.
Prereqs: CE 27300 with min grade of B- AND ME 32500 with min grade of B-

ME 57500 Theory and Design of Control Systems

Class:3 Lab:0 Credit:3

Covers the analysis and design of control systems from both a classical and modern viewpoint. with emphasis on design of controllers. Classical control design is reviewed, including both root locus and Bode domain design methodologies. The state space representation is introduced, along with notions of stability, controlling, and observability. State feedback controllers for pole placement and state observers are discussed with emphasis on their frequency domain implications.

ME 57700

Class:3 Lab:0 Credit:3

ME 58700

Class:3 Lab:0 Credit:3

ME 59700 Advanced Mechanical Engineering Projects I

Class:0-6 Lab:0-3 Credit:1-6

Attributes: Variable Title

Must be masters standing. May be repeated for credit. Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard graduate curriculum can be studied under the Mechanical Engineering Projects course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and prepare a brief description of the work to be undertaken in cooperation with their advisor.

ME 66400

Class:3 Lab:0 Credit:3

ME 69800 M.S. Thesis

Class:1-18 Lab:0-54 Credit:1-18

MET 01000

Class:2 Lab:3 Credit:3

MET 02000

Class:1 Lab:4 Credit:3

MET 03000

Class:3 Lab:2 Credit:3

MET 04000

Class:2 Lab:3 Credit:3

MET 10000 Production Drawing and Computer-Aided Design

Class:2 Lab:2 Credit:3

Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education, TransferIN

This course is an introduction to technical graphics and computer-aided design. The course includes sketching, production drawing, and a significant amount of hands-on experience on a CAD system. The production drawing portion covers topics like multi-view drawings, section views, auxiliary views and dimensioning.

MET 10200 Production Design and Specifications

Class:1 Lab:5 Credit:3

The design, evaluation and documentation of engineering specifications required of manufacturability and assembly are introduced. Emphasis is on CAD based details, assemblies, design layouts, equipment installations and related industrial practices.

Prereqs: MET 10000 with min grade of D- AND MET 16200 with min grade of D-

MET 11100 Applied Statics

Class:2 Lab:2 Credit:3

Force systems, resultants and equilibrium, trusses, frames, beams, and shear and moments in beams are studied.

Prereqs: MET 16200 with min grade of D-

MET 11800 Applied Mechanics: Statics

Class:3 Lab:0 Credit:3

A study of force systems, resultants and equilibrium, centroids of areas and centers of gravity of bodies, trusses, frames, beams, friction and moments of inertia of areas and bodies.
Prereqs: MA 14800 with min grade of D- OR MA 15900 with min grade of D-

MET 12000 Blueprint Reading and Sketching

Class:0 Lab:2 Credit:1

This introductory course will incorporate blueprint reading, freehand sketching, understanding orthographic projections, dimensioning and tolerancing, and the use of symbols in industrial drawings.

MET 14100 Materials I

Class:2 Lab:2 Credit:3

An overview of structures, properties, and applications of metals, polymers, ceramics, and composites commonly used in industry is presented. Problem-solving skills are developed in the areas of materials selection, evaluation, measurement and testing.
Prereqs: MA 14700 with min grade of D- OR MA 15900 with min grade of D-

MET 14200 Manufacturing Processes I

Class:2 Lab:1 Credit:3

Basic casting, forming, and joining processes are surveyed. The course emphasizes the selection and application of various processes.
Prereqs: MET 14100 with min grade of D-

MET 16100 Introduction to Engineering Technology

Class:0 Lab:3 Credit:1

Attributes: Gen Ed-Freshman Experience, Gen Ed-Wellness Education, Gen Ed-Univ/Personal Resources, Gen Ed-Wellness, General Education

This course will introduce engineering technology students to resources and skills that will help them to be successful in their careers. This course will help students explore engineering technology by introducing campus, regional and national resources such as professional societies in their choosen fields. It will also help students improve in areas important to becoming better students. These areas may include topics such as planning academic careers, mentoring, improving study skills, goal setting and utilization of library resources. In addition the course will focus on specific introductory concepts important to engineering technology students such as using campus computer resources and the TAC of ABET outcomes.

MET 16200 Computational Analysis Tools in MET

Class:0 Lab:3 Credit:1

Credit will not be granted for both MET 16200 & MET 16000. Instruction is given in analytical and computational problem-solving techniques. The electronic calculator the factor-label method of unit conversions, and engineering graphs are used to solve technical problems in Mechanical Engineering Technology.

MET 21100 Applied Strength of Materials

Class:3 Lab:2 Credit:4

The principles of strength, stiffness, and stability are introduced and applied primarily to mechanical components. Not open to students with credit in CET 260.
Prereqs: MET 11800 with min grade of D- OR MET 11100 with min grade of D-

MET 21300 Dynamics

Class:2-3 Lab:0-2 Credit:3

Kinematics and kinetics principles of rigid-body dynamics are introduced. Emphasis is on the analysis of bodies in plane motion.
Prereqs: MET 11800 with min grade of D-

MET 21400 Machine Elements

Class:3 Lab:0 Credit:3

The methods develooped in statics, dynamics, and strength of materials are applied to the selection of basic machine components. The fundamental principles required for the selection of individual elements that compose a machine are developed. Selected course topics are included as computer exercises.

Prereqs: MET 21100 with min grade of D- AND MET 21300 with min grade of D-

MET 21501 Applied Machine Elements

Class:2 Lab:2 Credit:3

The theories and methods developed in statics, dynamics, and strength of materials are applied to the selection of basic machine components. The course will develop the fundamental principles required for the selection of the individual elements of which a machine is composed.

Prereqs: MET 16100 with min grade of D- AND MET 21100 with min grade of D- AND MET 21300 with min grade of D-

MET 23000 Fluid Power

Class:2 Lab:2 Credit:3

This course consists of the study of compressible and incompressible fluid statics and dynamic as applied to hydraulic and pneumatic pumps, motors, transmissions and controls.

Prereqs: PHYS 22000 with min grade of D-

MET 24200 Manufacturing Processes II

Class:2 Lab:2 Credit:3

This course surveys the manufacturing processes and tools commonly used to convert cast, forged, molded, and wrought materials into finished products. It includes the basic mechanisms of material removal, measurement, quality control assembly procresses, safety, process planning, and automated manufacturing.

Prereqs: MET 10000 with min grade of D-

MET 29900 Mechanical Engineering Technology

Class:0-99 Lab:0-99 Credit:1-3

Attributes: Variable Title

Hours and subject matter to be arranged by staff. Primarily for third or fourth semester students with special aptitudes.

MET 30300 Automotive Sports

Class:1 Lab:0 Credit:1

This is a one credit hour, per semester course to be taken up three semesters. This course is designed to allow students to apply skills and knowledge learned along with concurrent course material, to a defined project. The project can be chosen by the student or assignment by the instructor. The student will work on this project to develop and apply solutions to the project challenges or design and implement a new resolution. This course will allow students to explore new technologies that may not be covered in the MET program content.

Prereqs: MET 10200 with min grade of D-

MET 30500 Computer-Aided Design With Applications

Class:2 Lab:2 Credit:3

This course provides an advanced study of computer-aided drafting and design utilizing current industrial computer - aided design systems. The course covers the use of these systems in three dimensional and parametric modeling applications.

Prereqs: MET 10000 with min grade of D-

MET 31300 Applied Fluid Mechanics

Class:3 Lab:0 Credit:3

Prerequisite: MET 230 and 235, Ma 222 or consent of instructor The fundamentals principles of fluid mechanics are developed, including properties of fluid, pressure hydrostatics, dynamics of fluid flow, friction losses, and sizing of pipes. Emphasis is on problem solving.

Prereqs: MA 22200 with min grade of D- AND MET 23000 with min grade of D-

MET 31500 Applied Mechanism Kinematics

Class:2-3 Lab:0-2 Credit:3

Application of the principles of kinematics to mechanisms. Graphical and semi-graphical methods are used to determine displacements, velocities and accelerations in common mechanisms. Practical coverage of slider-crank mechanism, scotch yoke, four bar linkage, Witworth mechanism, universal joints, Geneva wheel, and cams. Will include the use of computers and software to perform simulation of some generation, and four bar analysis.

Prereqs: MET 21300 with min grade of D- AND MET 21400 with min grade of D- AND MA 21900 with min grade of D-

MET 32500 Applied Thermodynamics I

Class:3 Lab:0 Credit:3

Applications of perfect gas laws, steam tables, principles of conservation of mass and energy, and heat transfer as they apply to power plants, engines, pumps, fans and refrigeration systems.

Prereqs: MA 21900 with min grade of D- AND PHYS 22000 with min grade of D-

MET 32900 Applied Heat Transfer

Class:2 Lab:2 Credit:3

An applied approach to the introduction of basic vocabulary and concepts related to the steady state transfer (i.e. conduction, convection, radiation) will be covered. Additional topics will include heat exchangers, boilers and solar energy.

Prereqs: PHYS 22000 with min grade of D- AND MA 21900 with min grade of D-

MET 34700 Programming of Automation Systems

Class:2 Lab:2 Credit:3

Study of fundamental concepts in computer numerical control (CNC) technology. Cutter centerline programming, cutter diameter compensation, tool nose radius (TNR) compensation, coordinate transformation, canned cycles, subprograms, user macros. The lab includes programming and operation of CNC turning and milling machines, CAD/CAM programming, and integration of design and manufacturing through computer network.

Prereqs: MET 10200 with min grade of D- AND MET 24200 with min grade of D-

MET 35500 Automation I

Class:2 Lab:2 Credit:3

An introduction to the design and application of programmable controller systems. Topics include programming techniques, input/output devices, personal computer interface, system design, safety and applications for automation.

Prereqs: ECET 35500 with min grade of D-

MET 38400 Instrumentation

Class:2 Lab:3 Credit:3

Study of measurement theory and principles, including temperature, pressure, level, flow and similar measurement used to control manufacturing processes.

Prereqs: MA 14800 with min grade of D- AND ECET 21400 with min grade of D-

MET 42000 Machine Design

Class:2 Lab:2 Credit:3

Design of moving machinery in complex electro- mechanical systems. Several projects will be completed that include mechanical design and control design to obtain the desired specifications.

Prereqs: MET 21400 with min grade of D- AND ECET 26200 with min grade of D- OR MET 35500 with min grade of D-

MET 42100 Air Conditioning and Refrigeration

Class:2-3 Lab:0-2 Credit:3

Heat gains and losses, heat-producing equipment, cooling, and refrigeration equipment are studied. System design is presented, including controls and instrumentation for commercial, industrial, and residential systems.

Prereqs: MET 32900 with min grade of D-

MET 42600 Internal Combustion Engines

Class:2 Lab:2 Credit:3

A study of the spark ignition, compression ignition, and continuous burning internal combustion engines.

MET 46000 Design for X

Class:2-3 Lab:0-2 Credit:3

Application of methods and techniques used in engineering, combined with statistical methods to develop quality, customer driven product development. The course will include topics in Design for Six Sigma for Manufactur- ability. Design for Serviceability and product life cycles. The course will require students to work in teams. 3D solid modelin will be used to generate ideas and complete product development. Course project will be taken from industry recognized

students design competitions.
Prereqs: MET 21400 with min grade of D- AND MET 30500 with min grade of D- OR CGT 11600 with min grade of D-

MET 46100 Computer Integrated Design and Manufacturing

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
A combination of lecture and laboratory projects demonstrating the integration of all phases of a product's life cycle from conception through recycling. Laboratory projects include designing parts, graphical finite element analysis, rapid phototyping, computer controlled manufacturing, and testing all using a common, three dimensional graphical database.
Prereqs: MET 20500 with min grade of D- OR MET 10200 with min grade of D- AND MET 21100 with min grade of D- AND MET 24200 with min grade of D-

MET 46500 Advanced Topics In Computer-Aided Design

Class:2 Lab:2 Credit:3
This covers solid modeling and animation. These topics are built upon a foundation in computer modeling or CAD to produce photo realistic images as used in technical presentations, video, or film.
Prereqs: MET 10000 with min grade of D- AND MET 20500 with min grade of D- OR MET 10200 with min grade of D-

MET 49500 Senior Project Survey

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Students will select several design projects and give written or oral reports on their proposed solutions. They will be encouraged to select and finalize one project proposal in preparation for MET 497.
Prereqs: OLS 33100 with min grade of D- AND IET 30800 with min grade of D-

MET 49700 Senior Project

Class:2-3 Lab:0-2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Directed work on individual projects for senior mechanical engineering technology students.
Prereqs: MET 49500 with min grade of D-

MET 49900 Mechanical Engineering Technology

Class:0-99 Lab:0-99 Credit:1-6
Attributes: Variable Title
Hours and subject matter to be arranged by staff. Course may be repeated for credit.

MET 52700 Technology From A Global Perspective

Class:3 Lab:0 Credit:3
Introduction to the challenges faced by the practicing technologist when working and interacting with international technical personnel, both here and abroad, including history, standards, education, and practice of technology outside the United States.

MET 53300 Nanotech And Applications

Class:3 Lab:0 Credit:3
This course provides an insight to the undelying principles and applications of the emerging field of Nanotechnology. Participants will be introduced to the scientific principles and theory of nanoscale dimension and discusses the current and future Nanotechnology applications and research in different fields. Graduate student or Senior status with instructor approval.

METS 35000

Class:0 Lab:0 Credit:0

METS 40000

Class:0 Lab:0 Credit:0

MFET 10500

Class:1 Lab:2 Credit:2

MGMT 50100 Advanced Taxation

Class:3 Lab:0 Credit:3

Advanced course in federal income taxation, with an in-depth study of corporations and partnerships. Additional topics will include professional responsibility, tax planning, and basic tax reserach.

Prereqs: MGMT 40400 with min grade of B

MGMT 50200

Class:3 Lab:0 Credit:3

MGMT 50300 Advanced Accounting

Class:3 Lab:0 Credit:3

Advanced course in financial accounting. A range of contemporary issues in financial reporting such as business combinations, consolidations, price-level adjustments, multi-nationals, and partnership accounting are covered. Both technical proficiency and user applications are emphasized.

Prereqs: MGMT 35100 with min grade of B

MGMT 50400 Tax Accounting

Class:3 Lab:0 Credit:3

Basic tax course designed to provide an understanding of the various federal insurance contribution, self-employment and unemployment taxes.

Prereqs: MGMT 35000 with min grade of B

MGMT 50500 Management Accounting II

Class:3 Lab:0 Credit:3

The focus of the course is managerial decision making and the economic role of information. Topics covered include decentralized financial performance evaluation, cost analysis, and financial planning and control systems.

Prereqs: MGMT 31000 with min grade of B AND MGMT 35100 with min grade of B

MGMT 50600 Auditing

Class:3 Lab:0 Credit:3

A study of the concepts and procedures of auditing, which is the systematic process of objectively obtaining and evaluating evidence regarding assertions and economic actions and events. Primary emphasis is on audits conducted by independent certified public accountants, but topics covered apply to internal auditing as well.

Prereqs: MGMT 35100 with min grade of B

MGMT 50700 Advanced Federal Income Taxes

Class:3 Lab:0 Credit:3

Advanced course in federal income taxes, with a brief study of gift and estate taxes. Some issues covered in MGMT 504 are studied in more depth, particularly taxation of corporations and partnerships. The course, which is taught in seminar format, gives the student considerable practice in doing tax research and reporting conclusions. It is especially appropriate for the student entering a career in a tax environment.

Prereqs: MGMT 50400 with min grade of B

MGMT 50800 Accounting for Nonprofit organizations

Class:3 Lab:0 Credit:3

A fund accounting course for non-profit organizations. Accounting for government entities, colleges and universities, hospitals and other non-profit organizations are included. In addition, analysis and interpretation of not-for-profit organization statements are covered.

Prereqs: MGMT 35100 with min grade of B

MGMT 50900 International Accounting

Class:3 Lab:0 Credit:3

Provides insighe into and understaning of the many accounting problems and issues faced in an international business environment. The material is approached from two compatible and overlapping perspectives: the perspective of accounting or financial management in a US multinational corporation and the perspective of an investor interested in understanding the internation business environment.

Prereqs: MGMT 35100 with min grade of B

MGMT 51200 Financial Institutions and markets

Class:3 Lab:0 Credit:3

NOT open to students with credit in MGMT 412. Analysis of management policy of financial institutions, including liquidity management, liability management, asset management, and capital management; description of the legal, economic, and regulatory environments and their implications for management. Emphasis on commercial bank management.

Prereqs: MGMT 31000 with min grade of B OR MGMT 61000 with min grade of B OR MGMT 61100 with min grade of B

MGMT 51500 Fraud Investigation

Class:3 Lab:0 Credit:3

Prerequiste MGMT 60000 or equivalent accounting experience. Develops an understanding of how and why occupational fraud occurs. This course focuses upon how fraudulent conduct may be deterred and how allegations of fraud should be investigated.

Prereqs: MGMT 60000 with min grade of B

MGMT 51600 Investment Management

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

NOT open to students with credit in MGMT 445. Treatment of problems of portfolio analysis, capital markets, and securities investment selection. Theoretical development and practical applications, at the level of the individual decision-maker.

Prereqs: MGMT 31000 with min grade of B OR MGMT 61000 with min grade of B OR MGMT 61100 with min grade of B

MGMT 51700 Data Analysis

Class:3 Lab:0 Credit:3

Prerequiste: MGMT 60000 or equivalent accounting experience. Develops an understandind of various aspects of IT auditing and fraud data analysis. This course covers the IT audit process to identify sources of fraud and to identify risks associated with information technology assurance.

Prereqs: MGMT 60000 with min grade of B

MGMT 51800 Criminology and Legal Issues

Class:3 Lab:0 Credit:3

Focuses on the topics of psychological and socilolgical theories of behavior as they relate to white collar crime. Develops an understanding of techniques and legal procedures associated with interviewing individuals associated with cases to support investigations.

Prereqs: MGMT 60000 with min grade of B

MGMT 51900 Advanced Fraud Investigation

Class:3 Lab:0 Credit:3

A capstone course in Fraud Investigation. The course covers major fraud case investigation, with an emphasis on forensic and litigation support aspects.

Prereqs: MGMT 60000 with min grade of B

MGMT 52600 Commercial Law

Class:3 Lab:0 Credit:3

Focuses primarily on the law of ownership, forms of business organizations, the uniform commerical code as it relates to sales, commerical paper and secured transactions, governmental regulation of business and accountant's liability.

MGMT 52700 Accounting Theory

Class:3 Lab:0 Credit:3

Important accounting constructs (such as assets, liabilities, cost) are defined, and measurement issues are discussed. Generally accepted accounting principles concepts principles, and assumptions are examined. The value of information via an examination of various theories of information and decision making, including psychological theories and theories of ethical decising making are considered.

MGMT 53400 Accounting Practice

Class:4 Lab:0 Credit:4

Presents a view of the various accounting. legal, and regulatory subjects expected to be tested on the uniform CPA exam. Topics covered include financial accounting and reporting, aduiting, business environment and concepts and business regulation.

Prereqs: MGMT 35100 with min grade of B AND MGMT 40400 with min grade of B AND MGMT 40600 with min grade of B AND MGMT 40700 with min grade of B

MGMT 54400 Database Management Systems

Class:3 Lab:0 Credit:3

Covers the theory and practice of database design and usage Students will learn the importance of data modeling concepts and how to use these effectively and how to plan and design a database, including issues such as a data security and control.

Prereqs: MGMT 29000 with min grade of C

MGMT 54600 Decision Support and Expert Systems

Class:3 Lab:0 Credit:3

Since a large percentage of societal and management problems can be characterized as relatively unstructured, this course explores how computers can be used to aid decision makers in dealing with unstructured, as well as structured, problems. Appropriate materials from knowledge representation, artifical intelligense and language theory is considered. Applications selected from environmental management and strategic planning in large organizations are used to illustrate theoretical ideas. Since the key computer software tool is database management, a development of the CODASYL approach to database management is presented.

MGMT 55100 Unified Modeling Language

Class:3 Lab:0 Credit:3

Prerequiste: Graduate standing and consent of instructor An introduction to (UML) modeling and major UML diagrams and how to apply them within object-oriented (OO) environments. Topics include UML basics, OO system analysis and design, development process, and UML diagrams.

MGMT 59000 Directed Readings in Management

Class:0-4 Lab:0 Credit:1-4

Attributes: Variable Title

Supervised reading and reports in various subjects. Open only to a limited number of seniors and graduate students.

MGMT 60000 Accounting For Managers

Class:3 Lab:0 Credit:3

For students in the management graduate program or by consent of school. Two-semester accounting sequence employs a user's perspective on the firm's database. First, the standard accounting model is developed into a working tool, as no prior study of accounting is assumed. Then illustrative business cases are discussed to show how external reports conform to financial contracts and public regulation. Public reports primarily directed to investors and creditors are analyzed to reconstruct the economic events and managerial decisions underlying generally accepted accounting standards.

MGMT 60100 Managerial Accounting

Class:2-4 Lab:0 Credit:2-4

Oriented to managers, the course examines the firm's internal systems for costing products or services and their interpretation. A variety of manufacturing and service industries are studies to demonstrate design of flexible cost systems to match the firm's technological, competitive and/or other multinational environments. Applications to budgeting, cariance analysis, pricing models, performance evaluation and incentives are demonstrated. Case discussion and snalytical "what if" modes of instruction are used to enhance managerial skills of students. Desing and use of accounting data are linked to other subjects in the program core and to ethical aspects of accounting policy issues.

Prereqs: MGMT 60000 with min grade of B

MGMT 60600

Class:2-4 Lab:0 Credit:2-4

MGMT 60800

Class:2-4 Lab:0 Credit:2-4

MGMT 61100 Financial Management II

Class:2-4 Lab:0 Credit:2-4

For students in the management graduate program or by consent of school. Long-term capital structure planning, capital budgeting, treatment of uncertainty in investment decisions, security underwriting, dividend policies, and mergers.

MGMT 61200 Financial Management III

Class:3 Lab:0 Credit:3

Further treatment of topics in the financial management of non-financial corporations, from the viewpoint of the internal financial officer. Emphasis on applications. Continuation of MGMT 611, with additional depth and topic coverage.

Prereqs: MGMT 61100 with min grade of B

MGMT 61400 Investments

Class:2-4 Lab:0 Credit:2-4

Examination of the process of asset valuation. Emphasis on portfolio analysis, security selection, risk-return relationships, and performance evaluation. Additional topics considered include security analysis, option pricing and analysis, futures contracts and security market operations.

MGMT 61500 Managing the Multinational Firm

Class:3 Lab:0 Credit:3

For students in the management graduate program or by consent of school. Integrative course dealing with the management of firms doing business internationally. Emphasis on decision making. Will draw upon, and adapt, managerial decision models developed for domestic operations, as well as cover appropriate international institutional material. Particular focus on finance and strategic management.

MGMT 62000 Marketing Management

Class:2-4 Lab:0 Credit:2-4

For students in the management graduate program or by consent of the school. An integrated analysis of major marketing decisions, including product, pricing, advertising, distribution, and sales force policies.

MGMT 62200 Marketing Strategy

Class:3-4 Lab:0 Credit:3-4

A managerial orientation to decision making in organizations dealing directly with mass consumer markets is provided. Important insights from the behavioral sciences are considered in light of decision objectives to develop capability in creation and management of consumer-oriented marking campaigns.

Prereqs: MGMT 62000 with min grade of B

MGMT 63000 Legal and Social Foundations of Management

Class:3 Lab:0 Credit:3

For students in the management graduate program or by consent of school. An examination of the nature of the legal environment from the viewpoint of the social and moral bases of law. Emphasis is given to the operation of our legal system and its significance in decision functions of management.

MGMT 64000

Class:2 Lab:0 Credit:3

MGMT 65000 Strategic Management

Class:2-4 Lab:0 Credit:2-4

Concepts and methods that integrate previous training in functional areas of management. The perspective is that of the general manager charged with directing the total enterprise. Emphasis is given to formulation and implementation of strategy.

Prereqs: MGMT 61200 with min grade of B AND MGMT 62200 with min grade of B

MGMT 65500 Competitive Strategy

Class:3 Lab:0 Credit:3

Examines how firms obtain and sustain superior returns through the development and implementation of a competitive strategy at the business-unit level. Focus is on strategies that develop and exploit two sources of superior returns: unique value-creating resources (e.g. patents, brand equity, operational capabilities) and powerful positions in markets and supply chains. Participants are expected to be familiar with basic competitive strategy concepts and tools such as "five-forces analysis," the value chain and generic strategy, drawing from the game theory.

Prereqs: MGMT 65000 with min grade of B

MGMT 66000 Introduction to Operations Management

Class:3 Lab:0 Credit:3

As goods and services are produced and distributed, they move through a set of inter-related operations or processes iin order to match supply and demand. The design of these operations for strategic advantage, investment in improving their efficiency and effectiveness, and controlling these operation to meet performance objectives is the domain of Operations Management. The primary objective of the course is to provide an overview of this important functional area of business.

Prereqs: MGMT 61100 with min grade of B AND MGMT 62000 with min grade of B AND MGMT 67000 with min grade of B

MGMT 67000 Business Analytics

Class:2-4 Lab:0 Credit:2-4

For students in the management graduate program or by consent of school. Introduction to quantitative decision procedures under uncertainty. Application of probability models. Bayesian inference, queuing models, hypothesis testing, and regression analysis to management problems.

MGMT 67100 Quantitative Methods II

Class:3 Lab:0 Credit:3

A continuation of Quantitative Methods I. Introduction to quantitative decision procedures under certainty. Applications of linear algebra, linear programming, network models, and convex programming to management problems.

Prereqs: MGMT 67000 with min grade of B

MGMT 68000 Introduction to Information Technology

Class:3 Lab:0 Credit:3

For students in the management graduate program or by consent of school. An introduction to the capabilities, limitations and applications of computers to the business environment. Addresses issues relating to computer hardware and software data management, problem analysis, and other management information systems (MIS) topics. Students use the computer as programmers, as users of existing software systems, and in the role of managers within business decision-making contexts.

MGMT 68300 Principles of Information Systems

Class:2 Lab:0 Credit:2

The important technological issues of computing are presented. The emphasis is on the impact of technology on the organization. Topics include problem organization and complexity, database management, operating systems, data communications, and privacy. Research projects on an assigned topic provide greater depth of coverage of certain topics.

MGMT 68500 Enterprise Integration

Class:2-3 Lab: Credit:2-3

Investigates the issues and requirements of enterprise integration; specifically, the issues related to information delivery services to enable crossfunctional integration within a distributed computing environment.

Prereqs: MGMT 68000 with min grade of B- OR MGMT 68300 with min grade of B-

MGMT 69000 Advanced Problems in Management

Class:0-4 Lab:0 Credit:1-4

Attributes: Variable Title

Admission requires consent of the department. Advanced investigation in a specific management field at the graduate level.

MILT UND Military Credit

Class:1-15 Lab:0 Credit:1-15
Credit by ROTC or DD 214.

MKG 22100 Principles Of Advertising

Class:3 Lab:0 Credit:3
An analysis of commercial persuasion from colonial times to the era of mass communication. The course examines the structure of advertising messages, how they are adapted to specific audiences, and the social settings in which they occur.

MKG 22400 Principles of Marketing

Class:3 Lab:0 Credit:3
An introduction to the principles and concepts underlying marketing decisions. The topics covered include distribution channels, pricing, promotion, product, consumer behavior, and environmental influences on marketing.

MKG 32400 Marketing Managment

Class:3 Lab:0 Credit:3
A managerial approach to the job of learning to make a decision on a prodcut policy, distribution channels, pricing, personal selling, advertising, and marketing research.

MKG 42000 Digital Marketing Campaigns

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
focuses on the preparation of a measurable direct/interactive marketing campaign for a real-world corporate client. Students perform research, formulate strategic conclusions, develop a digital theme, design the creative, outline the media plans, and establish evaluation for the campaign. Finalized campaigns are then shared with the real-world client for review.
Prereqs: MKG 22400 with min grade of C OR BA 22400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 32400 with min grade of C

MKG 42100 Integrated Market Communications

Class:3 Lab:0 Credit:3
This course integrates Advertising, Public Relations, and Publicity, Personnal Selling and Sales Promotion as the overall promotional mix. Various communication methods and tools are treated as variables for use alone or in combination to communicate attributes of products and services to the customer.
Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 22400 with min grade of C OR MKG 22400 with min grade of C OR BA 22400 with min grade of C

MKG 42200 International Marketing

Class:3 Lab:0 Credit:3
This course explores the opportunities in global markets and examines the challenges of global marketing. Emphasis is placed on the stragetic implications of competition in the various countries.
Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 22400 with min grade of C OR MKG 22400 with min grade of C OR BA 22400 with min grade of C

MKG 42400 Consumer Behavior

Class:3 Lab:0 Credit:3
An analysis of the environmental, social and psychological factors which influence an individual's buying decisions. The course covers how individual consumers are identified, motivated, and evaluated for use in various marketing activities. Emphasis is placed on the business approach for identifying the consumer's decision-making process.
Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 22400 with min grade of C OR MKG 22400 with min grade of C OR BA 22400 with min grade of C

MKG 42500 Marketing Research

Class:3 Lab:0 Credit:3
The management of the marketing research functions in industrial firms. Emphasis on market research and information

systems for planning and control.
Prereqs: (MGMT 32400 with min grade of C OR MKG 32400 with min grade of C) AND (MGMT 22500 with min grade of C OR BUSM 22500 with min grade of C)

MKG 42600 Marketing Channels

Class:3 Lab:0 Credit:3
Promotions management integrates advertising, publis relations and publicity, personal selling and sales promotion as the overall promotional mix. Various communication methods and tools are treated as variables for use alone or in combination to communicate attributes of products and services to the consumer. Functions of a retail establishment are examined. The topic covered include retail operations plannning, buyer behavior, store design, location, layout; organizing and staffing the retail firm; merchandise management; pricing concepts and strategies; promotion; credit; financial management; and a discussion of the future of retailing. Emphasis is given significant developments taking place in the major environments of retailing including social, economic, technological, and legal aspects.
Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 22400 with min grade of C OR BA 22400 with min grade of C OR MKG 22400 with min grade of C

MKG 42700 Sales Management

Class:3 Lab:0 Credit:3
Organization, management, and operation of the sales force. Examines the recruitment, selection, and processing of the sales force; motivation; forecasting; sales department, budgeting, and performance evaluation. Emphasis is given to the management of an outside sales force and its activities.
Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR BA 22400 with min grade of C OR MKG 22400 with min grade of C

MKG 42800 Advertising Management

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
This course provides an understanding and evaluation of the advertising function within the modern business environment. The course covers history, advertising and the promotional mix, and advertising as a vital communication tool.
Prereqs: MKG 32400 with min grade of C OR MGMT 32400 with min grade of C

MKG 42900 Advertising Campaigns II

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
Emphasizes the preparation of a complete advertising campaign for a business or non-profit organization. The student will be able to integrate marketing research and segmentation, media, and promotion plans, strategy, creative, and presentation in a unified campaign to serve a local or national organization.
Prereqs: MKG 43000 with min grade of C

MKG 43000 Advertising Campaigns I

Class:3 Lab:0 Credit:3
Emphasis on the management of marketing research, segmentation, analysis and campaign strategy for a business or non-profit organization as part of a local or national advertising campaign.
Prereqs: (MGMT 32400 with min grade of C OR MKG 32400 with min grade of C) AND MKG 42400 with min grade of C AND MKG 42500 with min grade of C

MKG 43300 Personal Selling

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects, ExL-Practicum
A detailed exposure to personal selling strategies and tactics, It examines effective selling in the consumer and industrial markets, including an analysis of consumers, motivation and communications, handling objections and closing techniques. The entire sales process is examined, with particular emphasis on relationship selling, planning, and delivery of sales presentations, and trust-building techniques. The roles of professional salespeople within their organizations and economic systems are investigated, as are important dimensions of sales careers.

Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C

MKG 43400 Digital Marketing Strategy

Class:3 Lab:0 Credit:3

An introduction to electronic marketing and the dynamics of Internet marketing.

Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 22400 with min grade of C OR BA 22400 with min grade of C OR MKG 22400 with min grade of C

MKG 43500 Services Marketing

Class:3 Lab:0 Credit:3

Addresses the distinct needs and challenges of managing services and delivering quality service to customer. The primary focus of the course is on distinctive approaches to marketing strategy, both in its development and execution, for service organizations. This course also addresses the role of service in manufacturing businesses as the basis for attaining a sustained competitive advantage.

Prereqs: MGMT 32400 with min grade of C OR MKG 32400 with min grade of C OR MGMT 22400 with min grade of C OR BA 22400 with min grade of C OR MKG 22400 with min grade of C

MKG 48000 Marketing Strategy

Class:3 Lab:0 Credit:3

This course integrates marketing concepts and application from previous marketing courses. The emphasis is on the formation of marketing strategy from the perspective of a marketing manager. The course should be taken only in the last year by all marketing students.

Prereqs: (MGMT 32400 with min grade of C OR MKG 32400 with min grade of C) AND (MGMT 42400 with min grade of C OR MKG 42400 with min grade of C) AND (MGMT 42900 with min grade of C OR MKG 42900 with min grade of C)

MKG 49500 Internship in Marketing

Class:1-4 Lab:0 Credit:1-4

Attributes: Experiential Learning, ExL-Internship, Variable Title

A special course in selected areas in managment, designed to provide practical field experience under professional supevision in selected situations.

MKG 49900 Undergraduate Research In Marketing

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title

Student will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. Durning this process the students will develop critical thinking and oral and written communication skills.

MSE 20000 Materials Science

Class:3 Lab:0 Credit:3

An introductory course designed to provide a basic background in the broad field of materials science. Emphasis placed on the chemical and physical principles underlying the utilization and behavior of metals, alloys ceramics, composites, and aggregates in engineering.

Prereqs: CHM 11500 with min grade of C-

MSE 34400 Materials in Engineering

Class:2 Lab:3 Credit:3

Attributes: Engr Tech Elective

Introduction to the structure and mechanical and physical properties of engineering materials. Selection of metals, alloys, plastics, ceramics, and composites for engineering applications. Strengthening methods and environmental effects. Analysis of the failure of materials under load. Laboratory experiments include mechanical testing, metallography, thermal treatment, and failure analysis.

Prereqs: MSE 20000 with min grade of C-

MSE 38500 Nondestructive Testing

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Basic principles and common application of nondestructive testing methods. The laws of physics are used to evaluate mechanical and physical properties of materials. The NDT methods cover magnetic, penetrants, eddy current, ultrasonic, radiography, and specialized methods.
Prereqs: MSE 20000 with min grade of D- AND PHYS 26100 with min grade of D-

MSE 59700 Selected Topics in Material Engineering

Class:0-3 Lab:0-6 Credit:3
Attributes: Engr Tech Elective, Variable Title
Hours and credits to be arranged.

MSL 10100 Foundations of Officership

Class:1-2 Lab:0-2 Credit:1-2
Examines the unique duties and responsibilities of officers. Discuss organization and role of the Army. Review basic life skills pertaining to fitness and communication. Analyze Army values and expected ethical behavior.

MSL 10200 Basic Leadership

Class:1-2 Lab:0-2 Credit:1-2
Presents fundamental leadership concepts and doctine. Practice basic skills that underlie effective problem solving. Apply active listening and feedback skills. Examine factors that influence leader and group effectiveness. Examine the officer experience.

MSL 12000 Read Military Map Survival

Class:1 Lab: Credit:1
Fundamentals of reading and interpreting maps and aerial photographs, including marginal information, symbols, map orientation, military grid reference system, terrain analysis. Application by planning movement of small groups, emphasizing problem solving and control.

MSL 20100 Individual Leadership Studies

Class:1-2 Lab:2 Credit:2-3
Develops knowledge of self, self-confidence and individual leadership skills. Develop problem sloving and critical thinking skills. Apply communication, feedback and conflict resolution skills.

MSL 20200 Leadership and Teamwork

Class:1-2 Lab:2 Credit:2-3
Focuses on self-development guided by knowledge of self and group processes. Challenges current beliefs, knowledge, and skills. Provides equivalent preparation for the ROTC Advanced Course and the Leader's Training Course.

MSL 23100 Leadership and Management of the Combat Team

Class:2 Lab:2 Credit:2
Course includes organizing for effective control, management tools and procedures for the leader, techniques of managing limited resources, and small unit leadership. Uses practical exercises, small groups, and role-playing to develop an understanding of concepts and procedures. Leadership lab consists of applied professional development courses.

MSL 30100 Leadership and Problem Solving

Class:3 Lab:0-2 Credit:4
Examines basic skills that underlie effective problem solving. Review the features and execurtion of the Leadership Development Program. Analyze military missions and plan military operations. Execute squad battle drills.

MSL 30200 Leadership & Ethics

Class:3 Lab:0-2 Credit:4
Probes leader responsibilities that foster an ethical command climate. Develop cadet leadership competencies. Prepare for success at National Advanced Leadership Camp. Recognize leader responsibility to accommodate subordinate spiritual needs. Apply principles and techniques of effective written and oral communication.

MSL 40100 Leadership and Management

Class:3 Lab:0-2 Credit:4
Builds on National Advanced Leadership Camp experience to solve organizational and staff problems. Discuss staff

organization, functions and processes. Examine principles of subordinate motivation and organizational change. Apply leadership and problem solving principles to a complex case study/simulation.

MSL 40200 Officership

Class:3 Lab:0-2 Credit:4

Designed to explore topics relevant to second lieutenants entering the Army. Describe legal aspects of decision making and leadership. Analyze Army organization for operations from the tactical to strategic level. Assess administrative and logistics management functions.

MSL 49000 Directed Studies In Military Science

Class:1-3 Lab:0 Credit:1-3

Individual readings, topics or projects in military science appropriate for advance undergraduate students. Permission of instructor required.

MSL UND Military Credit

Class:1-15 Lab:0 Credit:1-15

Credit by ROTC or DD 214.

MSV 56500 High Performance Computing

Class:3 Lab:0 Credit:3

An introduction to (HPC), with an emphasis on the programming and analysis aspects aspects of HPC for the practicing scientist, engineer or technologist. This course will prepare students to analyze, design, implement and evaluate parallel algorithms and computer codes. This course will cover the motivation for parallel programming, a description and analysis of Amdahl's Law, and parallel-programming methodology. Shared-memory and distributed-memory concepts will be compared, and current programming application programming interfaces (APIs) will be covered. General knowledge of undergraduate mathematics, science, engineering or technology required.

MSV 56700 Simulation Techniques

Class:3 Lab:0 Credit:3

An exploration of deterministic and stochastic simulation. Topics will include determining range of validity, boundary issues, managing complexity, optimization and parallelization of code, computational time management, adaptable meshes, fuzzy logic, and fidelity of simulation. Random number generation will also be covered for stochastic simulations. Examples and projects from a broad range of fields will be used.

MSV 57500 Software Project Management

Class:3 Lab:0 Credit:3

The factors influencing decision during the initiation, implementation, and termination of software projects are examined. Students work in project teams, using project management tools to develop implementation strategies, characterize contemporary technology projects, understand understand system perspective of projects, align projects with strategic objectives and learn advanced tools and techniques used in projects. Examples and case studies from a wide range of fields are utilized.

MSV 57600 Design And Analysis Of Simulation Experiments

Class:3 Lab:0 Credit:3

A review of currently accepted practices in design of simulation experiments, with validation and outcome analysis, and new techniques for model evaluation. Techniques covered may include methods for uncertainty quantification in deterministic models, design of experiments to match field experiments, data collection and sampling methods, data reduction methods, and imaging and statistical visualization.

MSV 57700 Visualization Techniques

Class:3 Lab:0 Credit:3

In this course graduate students in technology fields and related disciplines will learn how to convey salient information about underlying data and processes for work involving data visualization. Topics covered include various visualization techniques, issues in visual analytics, perceptions and cognition, and application of visualization techniques to problems in technical fields and related disciplines.

MUS 20300 Music for Elementary Teachers

Class:1 Lab:2 Credit:2

Junior standing required. An undergraduate methods course to provide future teachers in the elementary school with the knowledge, skills, and resources necessary to enhance the regular classroom situation with meaningful and varied musical experiences, and to execute the same with confidence, creativity, and enthusiasm. enthusiasm.

MUS 25000 Music Appreciation

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN

An introduction to the understanding of music. How to listen to its materials. A study of the media, forms, styles, and composers through recorded, live, and film media. Methods used in the structure of music as well as the aesthetic values present in music are also emphasized.

MUS 29000 Special Topics in Music

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Topics will vary.

MUS 35500

Class:3 Lab:0 Credit:3

MUS 36100 Music Theory I

Class:3 Lab:0 Credit:3

Attributes: Credit By Exam

Course comprises instruction in melodic and harmonic processes in tonal music; development of analytic, listening and piano techniques with musical equipment. No prerequistes; music reading ability is required, verified through placement exam.

MUS 36200 Music Theory II

Class:3 Lab:0 Credit:3

A variety of styles and forms of music serve to exemplify melodic and harmonic processess and voice-leading practices in diatonic tonal music. Activities include analytic reading of musical scores, developing musical listening skills, and acquiring functional piano techniques.

Prereqs: MUS 36100 with min grade of C

MUS 36300 Music Theory III

Class:3 Lab:0 Credit:3

Analytic study of art music and popular music representative of diatonic and chromatic tonal processes. Activities include analytic reading of musical scores, developing musical listening skills, and acquiring functional piano techniques. Creative applications are encouraged.

Prereqs: MUS 36200 with min grade of C

MUS 37800 Jazz Music

Class:3 Lab:0 Credit:3

This course is a historical and stylistic study of jazz.

MUS 39000 Special Topics in Music

Class:1-3 Lab: Credit:1-3

Attributes: Variable Title

Topics will vary.

MUS 49000 Guided Reading in Music

Class:0-6 Lab:0 Credit:1-6

Attributes: Variable Title

The course is offered for students with specialized needs and interests in the field.

NSO 10100

Class:0 Lab:0 Credit:0

NUR 18100 Introduction to Professional Nursing

Class:1 Lab:0 Credit:1

Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education

This is the Ethos I/Freshman Experience course. This is the first in a series of seminars designed to examine nursing within its professional context. In Ethos I, the heritage and tradition of professional nursing is explored as foundational to an understanding of contemporary nursing. Scholarly writing and research is introduced using APA format. Stratetgies are given to help students achieve academic success.

NUR 18200 Conceptual And Theoretical Thinking in Nursing

Class:2 Lab:0 Credit:2

This course examines the concepts that forms the philosophical and theoretical basis of nusing science and patient centered care. The content is leveled to provide undergraduate students a foundational understanding of nursing as a discipline and profession. The conceptual framework and philosophy of the school of nursing will be studied. Special emphasis will be placed on the relationship between nursing philosophy, knowledge, research, and practice.

Prereqs: NUR 18100 with min grade of C

NUR 18800 Foundations of Physical Assessment

Class:2 Lab:3 Credit:3

Foundational principles of physical assessment are examined in the context of patient centered care. A systematic approach to physical assessment of individuals across the life span in introduced. Health promotion, evidence based practice and critical thinking are presented as foundational to physical assessment.

Prereqs: BIOL 21400 with min grade of C AND NUR 19200 with min grade of C AND NUR 19600 with min grade of C

NUR 19200 Foundations of Nursing

Class:2 Lab:0 Credit:2

The nursing process is introduced as a systematic approach to patient centered care. The concept of basic human needs and evidence based nursing practice are presented as foundational to the curriculum.

Prereqs: CHM 11900 with min grade of C AND NUR 18100 with min grade of C AND BIOL 21400 with min grade of C

NUR 19600 Foundations of Psychosocial Nursing

Class:3 Lab:0 Credit:3

Foundational principles of psychosocial nursing are taught in the context of patient centered care. Emphasis is placed on concepts of life span development, basic human needs, therapeutic relationships and therapeutic communication. The elemental components of evidence based nursing practice are introduced.

Prereqs: PSY 12000 with min grade of C

NUR 19700 Practicum I

Class:0 Lab:6 Credit:2

Attributes: Malpractice-Nursing

This course is the foundational clinical practicum incorporating principles of assessment, psychosocial nursing and nursing fundimentals to the clinical setting. Critical thinking skills are developed as students learn to apply the nursing process to provide patient centered care in order to meet the basic human needs of adult individuals. Clinically appropriate psychomotor skills are learned and reinforced.

Prereqs: NUR 19200 with min grade of C AND NUR 19600 with min grade of C

NUR 26500 Health Issues in the Classroom

Class:3 Lab:0 Credit:3

This course is designed for prospective elementary education teachers. Students will examine current health problems of school children, which they may encounter in the classroom. Concepts of first aid and emergency care will be taught. Interdisciplinary aproaches to classroom health problems will be incorporated. Students will be expected to apply course concepts in field experiences.

NUR 27400 Essentials Pharmacokinetics for Nursing

Class:2 Lab:0 Credit:2

The nursing process is utilized as a systematic approach to the safe and accurate administration of medications: Dosage caculations, basic pharmacokinetics, safety implications, and use of critical thinking are emphasized.

Prereqs: NUR 19200 with min grade of C

NUR 27500 Alternative Therapies for Nursing Practice

Class:2 Lab:0 Credit:2
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
This course focuses on a range of options that complement Western biomedical health care. Ancient and contemporary practices throughout the world are explored in the context of culture, understanding that other cultures and countries have valid ways of preventing and curing diseases. Emphasis is placed on the integration and balance of body, mind and spirit. The evidence basis of complimentary and alternative therapies is incorporated into the course.

NUR 28200 Adult Nursing I

Class:4 Lab:0 Credit:4
This course builds on the foundational nursing courses. Concepts of health promotion, maintenance, restoration and palliation will be utilized to focus on patient centered care in the adult population. Evidence based practice will guide the nursing process to address basic human needs.
Prereqs: NUR 19700 with min grade of C AND BIOL 21400 with min grade of C AND NUR 27400 with min grade of C

NUR 28300 Practicum II

Class:0 Lab:6 Credit:2
Attributes: Experiential Learning, ExL-Practicum, Malpractice-Nursing
Note: NUR 282 can be taken before OR during the same semester as NUR 283. is the second clinical course in a series of three practica. Clinical lab experience emphasize application of the nursing process in the direct care of adult individuals with an emphasis on health promotion, health maintenance, and palliation. Patient centered care related to basic human needs is implemented utilizing critical thinking and evidence based nursing practice.
Prereqs: NUR 19700 with min grade of C AND NUR 28200 with min grade of C

NUR 28400 Nursing of Women and Children

Class:5 Lab:0 Credit:5
Building on the foundational core, the nursing process is utilized as a systematic approach to promote adaptation of women and children to stimuli. Evidence based interventions, specific to each developmental stage of the evolving family are taught. Emphasis is placed on health promotion across the lifespan which supports the needs of women and children.
Prereqs: NUR 28200 with min grade of D AND NUR 28300 with min grade of D AND CDFS 21000 with min grade of D

NUR 28500 Maternal Child Nursing Practicum

Class:0 Lab:6 Credit:2
Attributes: Malpractice-Nursing
Note: NUR 284 can be taken before OR during the same semester as NUR 285. Clinical lab experience for the application of nursing process in the direct care of childbearing and childrearing families are provided in a structured setting. Therapeutic intervention aimed at supporting adaptation in psyiological, self-concept, role function, and interdependence modes are practiced.
Prereqs: NUR 27400 with min grade of C AND NUR 28400 with min grade of C AND NUR 29400 with min grade of C

NUR 28600 Mental Health Nursing

Class:3 Lab:0 Credit:3
Building on the foundations of psychosocial nursing, this course advocates for autonomy of clients in the least restrictive environment. A commitment to social justice for those who experience discrimination on the basis of their mental illness is emphasized. Evidence based nursing practice provideds the structure for supporting clients' and their families' strengths and adaptation when faced with pathology and dysfunction. The focus is on interpersonal and communication skills critical to every area of nursing practice.
Prereqs: NUR 19600 with min grade of C

NUR 28700 Mental Health Practicum

Class:0 Lab:3 Credit:1
Attributes: Malpractice-Nursing
Building on the theoretical knowledge of Mental Health Nursing. This course provides both structured and unstructured

clinical experiences with individuals and families, experiencing mental disorders. The focus is on mental health promotion, mental health restoration, and mental health maintenance. Using current evidence, patient centered care is based on the analysis of individual clients' psychodynamic and psychoeducational needs. Interpersonal and communication skills are utilized to help clients attain their personalty defined quality of life.
Prereqs: NUR 19700 with min grade of C AND NUR 28600 with min grade of C

NUR 28800 Essentials of Management and Leadership in Nursing

Class:3 Lab:0 Credit:3
NUR 284 and NUR 285 can be taken before or during the same semester as NUR 288. Selected management and leadership principles are introduced. Specific strategies for effective time management, priority setting, decision making, career planning and delegation are introduced. Foundational ethical and legal principles are discussed as they relate to standards of care.
Prereqs: NUR 28700 with min grade of D AND NUR 28300 with min grade of D AND NUR 29200 with min grade of D AND NUR 28400 with min grade of D AND NUR 28500 with min grade of D

NUR 28900 Associate Degree in Nursing Capstone Course

Class:0 Lab:9 Credit:3
Attributes: Malpractice-Nursing
NUR 284 and NUR 285 can be taken before or during the same semester as NUR 289. This capstone course incorporates the application of the nursing process and critical thinking skills in direct patient care. Emphasis is on prioritization, delegation and collaboration as students synthesize increasingly difficult concepts in a structured setting.
Prereqs: NUR 28300 with min grade of D AND NUR 28700 with min grade of D AND NUR 28400 with min grade of D AND NUR 28500 with min grade of D

NUR 29200 Adult Nursing II

Class:3 Lab:0 Credit:3
Building on the foundational core, the nursing process is utilized as a systematic approach to therapeutic intervention with adult individuals adapting to stimuli. Concepts relative to physiological integrity are emphasized.
Prereqs: NUR 28300 with min grade of C

NUR 29400 Essential Pharmacotherapeutics for Nursing

Class:3 Lab:0 Credit:3
A systematic approach is used to examine the pharmacotherapeutics and the administration of common prescription and non-prescription medications across the lifespan. Emphasis is placed on nursing responsibilities related to ongoing assessment of drug effects, analysis of corresponding diagnostic data and evidence based interventions with individuals receiving drug therapy.
Prereqs: NUR 27400 with min grade of C AND NUR 19200 with min grade of C

NUR 29900 Special Topics

Class:0-6 Lab:0 Credit:1-6
Attributes: Variable Title
Hours, credit, and subject matter to be arranged by staff. Course may be repeated for credit up to six hours.

NUR 31700 Nursing Care of Women Through the Lifespan

Class:3 Lab:0 Credit:3
Building on previous curriculuar concepts this course focuses on principles of health promotion, health maintenance, health restoration and palliation, specifically applied to the female patients. Students further develop critical thinking skills by planning developmentally appropriate patient and family centered care. Students utilize best available evidence when implementing the nursing process with female patients and their families.
Prereqs: NUR 29400 with min grade of C AND NUR 28200 with min grade of C AND NUR 28300 with min grade of C

NUR 31800 Maternity Practicum

Class:0 Lab:3 Credit:1
Attributes: Experiential Learning, ExL-Practicum, ExL-Service Learning
Building on the theoretical knowledge of Nursing Care of Women Throughout the Lifespan this provides structured clinical experiences with women and their families during the childbearing experience. Evidence based nursing practice

is utilized to assist families as they progress through the childbearing experience. The teaching learning process is used to assist childbearing families meet basic needs of the developing family.
Prereqs: NUR 31700 with min grade of C

NUR 32201 International Nursing: A Cultural Immersion

Class:1 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship, ExL-Cultural Immersion
Students will actively participate in an international cultural immersion experience providing nursing care, as well as studying the cultural and economic influences on healthcare. The students' focus is three-fold. The first is the role of service to a select international population through a variety of activities. Secondly, the students will incorporate prior nursing skills and knowledge learned in fundamental nursing courses in a variety of experiential nursing experiences. Finally, students wil be expected to become immersed in the culture of the land through a multitude of activities, such as currency exchange, open market negotiations, meal preparation, and daily interactions with local peoples.
Prereqs: NUR 28300 with min grade of C

NUR 35200 Nursing Care of Older Adults

Class:1 Lab:0 Credit:1
This course examines concepts related to basic human needs specific to older adults. Evidence based health care practices that exhibit patient centered care related to health promotion, maintenance, restoration and palliation are examined. Ethical and leagal dilemmas impacting the lifestyle of older adults are presented. Emphasis is placed on promoting positive attitudes of the professional nurse in caring for older adults.

NUR 36100 Pediatric Nursing

Class:2-3 Lab:0 Credit:2-3
Building on previous curricular concepts this course focuses on principles of health maintenance, health restoration and palliation specifically applied to the pediatric patient. Students further develop critical thinking skills by planning developmentally appropriate patient and family centered care. Students utilize best available evidence when implementing the nursing process with pediatric patients.
Prereqs: NUR 28200 with min grade of C AND NUR 28300 with min grade of C AND NUR 29400 with min grade of C

NUR 37200 Pediatric Nursing Practicum

Class:0 Lab:3 Credit:1
This clinical provides patient care experience that support the application of the nursing process in the provision of patient centered care to children and families. These experiences are provided in acute and chronic settings. Developmentally appropriate, evidence based nursing care is practiced.
Prereqs: NUR 36100 with min grade of C AND NUR 29400 with min grade of C

NUR 38400 Concepts of Role Development in Professional Nursing

Class:3 Lab:0 Credit:3
This course examines professional nursing roles and professional nursing standards of practice within the context of structured and unstructured settings. Concepts and issues pertinent to the current environment of professional nursing practice are discussed. Personal and professional values that provide a focus for evolving professional socialization are explored.
Prereqs: NUR 19700 with min grade of C

NUR 38500 Application of Principles of ECG Monitoring

Class:2-3 Lab: Credit:2-3
This course is designed to enable the nursing student to utilize electrocardiographic tracings in the management of adult patients with cardiac conduction abnormalities. Emphasis is placed on practical application of principles of cardiac monitoring, identification and interpretation of dysrhythmias, and related medical management and nursing intervention.
Prereqs: NUR 28200 with min grade of C

NUR 38800 Nursing of Families and Groups

Class:3 Lab:0 Credit:3
Theoretical frameworks and the nursing process are utilized to support the basic needs, promote the health of families

and groups, and facilitate the development of group leadership skills.
Prereqs: NUR 28600 with min grade of C AND NUR 18200 with min grade of C

NUR 39000 Nursing Research

Class:3 Lab:0 Credit:3
This course examines the research process and use of research based evidence as a foundation for nursing. A review of both quantitative and qualitative methodologies will be incorporated. Distinguishing amoung non-research based primary and meta-sources of evidence will be emphasized. Critical thinking skills will be used to read and evaluate published research.
Prereqs: BHS 20100 with min grade of C

NUR 39100 Professional Ethics

Class:2 Lab:0 Credit:2
Theoretical and practical application of ethical principles are applied to nursing and patient centered care. Particular attention is given to the ideas of advocacy, autonomy, and authority in beginning professional nursing practice.
Prereqs: NUR 28300 with min grade of C

NUR 39200 Adult Nuring II

Class:3 Lab:0 Credit:3
Continuing to build on the core concetps introduced in Adult Nursing I evidence based nursing practice is utilized as an approach to patient centered care with adult individuals seeking health. Concepts relative to basic human needs are emphasized.
Prereqs: NUR 28300 with min grade of C

NUR 39300 Practicum III

Class:0 Lab:9 Credit:3
Attributes: Experiential Learning, ExL-Practicum, Malpractice-Nursing
is the third clinical course in a series of three practica. Clinical lab experiences involve the provision of evidence based, patient centered, nursing care to individuals and small groups of adults with complex medical problems. Building on the complexity of the role of the nurse, the conceptss of time management, prioritization delegation, and collaboration are introduced with practical application in the clinical setting.
Prereqs: NUR 28300 with min grade of C

NUR 39400 Health Promotion and Education

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects
The role of the nurse as a health educator is implemented. Nursing and non-nursing theories related to health promotion and teaching-learning processess are examined. Principles of health literacy related to patient education are emphasized. Evidence-based nursing projects related to health education within a community environment are implemented.
Prereqs: CIS 20400 with min grade of C

NUR 39700 Nursing Care of the Aged, Disabled and Chronically Ill

Class:3 Lab:0 Credit:3
Basic human needs of the aged, person's living with chronic health problems and/or disabilities are introduced. Principles of health promotion, health restoration and palliation are examined. Evidence based nursing practice is emphasized within the context of patient centered care.
Prereqs: NUR 28300 with min grade of C AND CIS 20400 with min grade of C

NUR 39900 Special Topics

Class:0-3 Lab:0-9 Credit:1-3
Attributes: Variable Title
Hours, credit, and subject matter to be arranged by staff. Course many be repeated for credit up to nine hours.

NUR 41500 Pathophysiology

Class:3 Lab:0 Credit:3
The most common morbidity problems manifested throughout the lifespan are studied. Pathophysiologic concepts and

physiologic responses are integrated with the nursing process. The application of evidence based nursing practice modalities provides a basis to address basic human needs.
Prereqs: NUR 28200 with min grade of C AND NUR 28300 with min grade of C

NUR 45100 Nursing Informatics

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Computer Utilization, Gen Ed-Computer Utilization, General Education
This course providees a basic understanding of nursing, computer science, and information science to prepare students to effectively and efficiently use technology to identify, collect, process and manage health care information. A focus on technology based health applications which support clinical, administrative, research, and educational decision-making to enhance the efficancy of nursing is provided.

NUR 45200 Quality And Safety In Professional Nursing Practice

Class:3 Lab:0 Credit:3
Using a project-management focus, this course provides students the opportunity to synthesize and apply previous knowledge related to: patient-center care, teamwork and collaboration, evidence-based practices, quality improvement, and safety in a professional leadership role.
Prereqs: NUR 36100 with min grade of C AND NUR 37200 with min grade of C

NUR 48200 Nursing Leadership and Management

Class:2 Lab:0 Credit:2
Theories and evidence related to leadership, organization and management are examined. Specific strategies for effective time management, priority setting, decision making career planning and delegation are introduced. Approaches to the quality nursing practice within a complex work environment are discussed.
Prereqs: NUR 38400 with min grade of C AND NUR 39000 with min grade of C

NUR 48300 Community & Public Health Nursing

Class:4 Lab:0 Credit:4
This course is available to the RN only. Concepts of community and public health nursing are introduced. Community health nursing roles related to evidence based practice, leadership collaboration, quality improvement and political activism are explored. Critical thinking skills are applied in the assessment of vulnerable populations existing within various communities. The reciprocal influence of the environment on the patient, family and community relative to human needs is emphasized.
Prereqs: NUR 39000 with min grade of C AND NUR 38800 with min grade of C AND NUR 39400 with min grade of C

NUR 48500 Community Health Practicum

Class:1 Lab:6 Credit:3
Attributes: Experiential Learning, ExL-Practicum, Malpractice-Nursing
The community health practicum emphasizes integration of professional nursing roles and community health concepts. The nursing process is utilized as a systematic approach to foster adaptation to stimuli within a dynamic environment. Evidence based interventions that emphasize preventative strategies are applied to persons across a lifespan in unstructured settings.
Prereqs: NUR 39300 with min grade of C AND NUR 39700 with min grade of C AND NUR 48600 with min grade of C

NUR 48600 Community Health Nursing

Class:3 Lab:0 Credit:3
Attributes: Malpractice-Nursing
Concepts of community, and community health nursing are introduced. Community health nursing roles related to evidence based practice, leadership, collaboration, quality improvement and political activisim are explored. Critical thinking skills are applied in the assessment of a community and its potential for meeting the basic human needs of its constituents.
Prereqs: NUR 38800 with min grade of C AND NUR 39000 with min grade of C AND NUR 39400 with min grade of C

NUR 48701 Transitions Into Professional Nursing Practice

Class:2 Lab:0 Credit:2
This two credit course prepares senior nursing students with the knowledge, skills and attitude necessary to effectively

prepare for transition from the role of student to entry level nurse. Specifically, test-taking strategies and practice, NCLEX perparation and licensure application will be addressed.

NUR 48800 Capstone Course Preparation

Class:1 Lab:0 Credit:1
Attributes: Malpractice-Nursing
Note: NUR 487 and NUR 497 can be taken before or during the same semester as NUR 488. Under the guidance of faculty, the student develops a plan to synthesize the roles of professional nursing, specifying learning objectives, learning activities, and evaluation criteria for a practicum in an identified area of interest.
Prereqs: NUR 39300 with min grade of C AND NUR 48500 with min grade of C

NUR 49800 Capstone Course in Nursing

Class:1 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects, ExL-Practicum, ExL-Service Learning, Malpractice-Nursing
In collaboration with a nursing faculty and clinical liaison students will plan and implement an evidence-based project consistent with the professional leadership role. Students will use critical thinking skills and evidence based practice to promote patient centered nursing in a health care environment of work complexities. This course will culminate with an evidence-based project that will be presented to peers and the academic community.
Prereqs: NUR 39300 with min grade of C AND NUR 48500 with min grade of C AND NUR 48200 with min grade of C AND NUR 48600 with min grade of C

NUR 50000 Theoretical Constructs in Nursing

Class:3 Lab:0 Credit:3
This course examines the integration of theory/ conceptual relationships in the development of nursing knowledge. Students explore ways in which nurses in advanced practice incorporate theoretical knowledge in the implementation of the advanced practice in nursing role. Students analyze the clinical relevance of mid-range and pratice theories. Students examine the relationship of theoretical constructs to research and praxis through concept analysis, theory evaluation, and discussion of the application of theory to practice. This course examines ways in which theoretical thought is embedded in evidence-based nursing practice.
Prereqs: NUR 50100 with min grade of B

NUR 50100 Foundations of Advanced Practice in Nursing

Class:2 Lab:0 Credit:2
This course builds on the knowledge and experiences that students possess when beginning their advance practice in nursing education. Students explore their assumptions about advanced practice in nursing, its historical context and definitions of the various advanced practice roles, conceptual underpinnings and role competencies. Students develop an appreciation for how evidence based practice influences advanced practice in nursing. They develop skills that include using information communication technologies, identifying problems, posing questions that lead to evidence sources, searching and differentiating among various sources and types of evidence.

NUR 50200 Pharmacotherapeutics for Advanced Practice Nursing

Class:3 Lab:0 Credit:3
Course includes pharmacodynamics, and pharmacotherapeutics of broad categories of pharmacologic agents. Students apply these principles and also consider the role of best available evidence and patient preferences as a basis for managing pharmacologic regimens. Students review regulations relevant to prescriptive authority for advanced practice nurses.
Prereqs: NUR 50700 with min grade of B

NUR 50300 Advanced Health Assessment

Class:2-3 Lab:3 Credit:3-4
Students develop advanced, evidence-based health assessment skills that build on their current knowledge and abilities. Major concepts of the course include comprehensive and focused history taking and advanced physical assessment. Students relate underlying physiologic mechanisms with normal and abnormal findings from the history and physical assessment. The course provides a basis for designing a culturally sensitive and evidence-based plan of care within the situational context of the individual.

Prereqs: NUR 50100 with min grade of B AND NUR 50200 with min grade of B AND NUR 50500 with min grade of B AND NUR 50700 with min grade of B AND NUR 51000 with min grade of B

NUR 50500 Sociocultural Influences on Health

Class:2-3 Lab:0 Credit:2-3

This course examines the influences of cultural and sub-cultural variables on health and health care delivery. Students analyze and apply appropriate theoretical perspectives and current research to design evidence-based strategies that ground clinical decision making in advanced practice nursing. Students use the National Standards on Culturally and Linguistically Appropriate Services (CLAS) as the basis for providing culturally competent care. As students apply principles of culturally competent communication they are encouraged to develop insight and an attitude of resistance to stereotyping. Students gain an understanding of the context of vulnerable and marginalized populations through the analysis of social, cultural and economic influences that impact health and illness.

NUR 50700 Physiologic Concepts for Advanced Practice Nursing

Class:3 Lab:3 Credit:4

Students examine the principles of physiologic functin at all levels of organization from cells to organ systems as they affect human function. The course uses homeostaais as a model to account for regulatory and compensatory functions in health. Students develop the necessary theoretical and empirical foundation for subsequent understanding of the diagnosis and management of human responses to disease and nondisease-based etiologies.

Prereqs: NUR 50100 with min grade of B

NUR 51000 Research and Evidence Based Nursing Practice

Class:3 Lab:0 Credit:3

This course focuses on both the generation of evidence through an in-depth examination of the reserach process and its critical use in evidence based practice. Students systematically search, appraise and interpret the best available evidence that informs advanced practice nursing and health related disciplines.

Prereqs: PSY 50000 with min grade of B AND NUR 50100 with min grade of B

NUR 51100 Health Promotion For Advanced Practice In Nursing

Class:2 Lab:0-3 Credit:2-3

Attributes: Malpractice-MS Nursing

Students analyze health promotion/disease prevention, and health education frameworks combined with best available evidence as a foundation for advanced practice in nursing. Students promote the health of diverse client populations by incorporating the Healthy People goals,clinical practice guidelines, risk assessment, epidermiological data and evidence based screening tools into nursing practice. In collaboration with selected clients and/or families, students implement health coaching/teaching through the integration of family health promotion and health literacy theories.

Prereqs: NUR 50300 with min grade of B AND NUR 51000 with min grade of B

NUR 52500 Informatics In Nursing

Class:2-3 Lab:0-3 Credit:0-3

Integrates nursing science with computer technology and information science to identify, gather, and manage information. Emphasis on technology based health applications with support clinical, administrative, research, and educational decision making enhancing the efficacy of nursing endeavors.

NUR 52700 Ethics For Nurses in Advanced Practice

Class:3 Lab:0 Credit:3

The focus of this course is on moral dilemmas and ethical implications occurring in a variety of contexts. Students explore both theoretical and pragmatic viewpoints of dilemmas as they relate to the role of nurses in advance practice. Content includes the historical, theoretical, contextual, and practical aspects of ethical nursing practice, as well as the application of ethical frameworks, concepts, and principles.

NUR 55500 Health Disparities: Care of Vulnerable Populations

Class:3 Lab: Credit:3

Prepares the advanced practice nurse to address and find solutions for vulnerable populations and individuals in the health care system. Students investigate and analyze current issues and health-care policies, focusing on health disparities that impact vulnerable people. The advanced practice nurse examines the legal and ethical aspects of managing the health care of disparate individuals, families, and groups.

NUR 57400 Pathophysiologic Concepts For Advanced Practice Nursing I

Class:0 Lab:0 Credit:3

Students examine the principles of physiologic and pathophysiologic function at all levels of organization from cells to organs, systems and the human organism. They apply these physiologic and pathophysiologic concepts to understand who illness and disease alter cell and organ/ system function that lead to clinical manifestations. The course uses homeostasis and a model to account for regulatory and compensatory functions in health and illness across the lifespan. Students develop the necessary theoretical and empirical foundation of subsequent understanding of the diagnosis and management of integrated human responses to disease and aging. This course is one of a two-semester series; this term concepts covered include dynamic regulation, cell structure and function, genetics and genomics, altered cell proliferation, host defense/immunopathology, nervous regulation/ dysfunction, movement and integrative function and dysfunction.

NUR 59900 Special Topics In Nursing

Class:0-6 Lab:0-6 Credit:1-6

Attributes: Variable Title

Requirement: Graduate standing or consent of instructor. Special topics in nursing are critically examined. Hours, credit and subject matter are determined by staff.

NUR 60000 Adult-Gerontology Clinical Nurse Specialist I

Class:3 Lab:0 Credit:3

Students analyze theory and evidence to design clinical nurse specialist care for youngest to oldest adult patiens across the wellness to illness continuum. Students use problem-solving and evidence based practice methodologies to diagnose, plan and evaluate interventions for select disease and illness phenomena. The focus is on analyzing etiologies of symptoms and functional problems, using evidemce-based and theoretically sound advenced nursing interventions and assessment of associated outcomes ot practices. Students develop clinical nurse competencies necessary to manage the complexities of youngest to oldest adults as they transition through multiple contexts of care such as healthcare settings and wellness to illness trajectories.

Prereqs: NUR 50000 with min grade of B AND NUR 51100 with min grade of B

NUR 60100 Adult-Gerontology Clinical Nurse Specialist Practicum I

Class:0 Lab:0 Credit:3

Attributes: Malpractice-MS Nursing

Students apply advanced knowledge of the theory and evidence based practice to care for youngest to oldest adult patients across the wellness/illness continuum. Students apply skills related to holistically assessing health/symptoms, promoting health, and managing illness and responses to disease. In addition to direct care activities focused on the adult-gerontology population, students develop skills related to consultation, collaboration, coaching and leadership within the healthcare system. Students also use problem-solving methods based on a systhesis of theoretical and empirical evidence to advanced nursing care of youngest to oldest adult patients.

Prereqs: NUR 50000 with min grade of B AND NUR 51100 with min grade of B AND NUR 60000 with min grade of B

NUR 60200 Critical Care Clinical Nurse Specialist I

Class:3 Lab:0 Credit:3

Students analyze theory and research related to the patient client sphere of influence in order to design care for patients with critical illness. Students use problem-solving and evidence-based practice methodologies to diagnose, plan and evaluate interventions for select disease and nondisease based phenomena. The focus is on understanding etiologies of symptoms and functional problems, the need for intervention and associated outcomes of practice.

Prereqs: NUR 50000 with min grade of B AND NUR 51100 with min grade of B

NUR 60300 Critical Care Clinical Nurse Specialist Practicum I

Class:0 Lab:0 Credit:2

Attributes: Malpractice-MS Nursing

Students apply advanced knowledge of theory and research to care for patients/clients with critical illness who require the care of a clinical nurse specialist. Students use problem-solving methodologies based on synthesis of theoretical and

empirical evidence to advance nursing care of patients/clients. Students participate in direct and indirect care activities that impact nurse-sensitive patient client outcomes.
Prereqs: NUR 50000 with min grade of B AND NUR 51100 with min grade of B AND NUR 60200 with min grade of B

NUR 61100 Primary Care of The Young Family

Class:3 Lab:0 Credit:3
Prepares family nurse practitioner students to assume responsiblity for the coordination and delivery of culturally appropriate health services to childbearing and childrearing families. Students apply theory and research to the management of pregnancy, well-child care, stable chronic conditions and acute episodic illnesses commonly encountered in primary care settings. The course emphasizes a sound conceptual basis for practice and an appreciation for evidence-based care. Students continue to integrate health promotion and health maintenance into the primary care of young families.
Prereqs: NUR 50000 with min grade of B AND NUR 51100 with min grade of B

NUR 61300 Primary Care Of The Young Family Practicum

Class:0 Lab:0 Credit:3
Attributes: Malpractice-MS Nursing, Malpractice-Nursing
Students progress in their ability to master the competencies of the family nurse practitioner, using critical thinking and diagnostice reasoning skills. Students apply knowledge of clinical research, pharmacology physiology, and conceptual frameworks to the primary care of childbearing and childrearing clients and families.
Prereqs: NUR 50000 with min grade of B AND NUR 51100 with min grade of B AND NUR 61100 with min grade of B

NUR 61800 Adult Health Nursing II

Class:3 Lab:0 Credit:3
Attributes: Malpractice-MS Nursing
Students analyze theories and research related to adult health nursing personnel and organizational spheres of influence. Clinical nurse specialist competencies focused toward nursing personnel and other healthcare providers and organizations are addressed. The emphasis is on using problem-solving and evaluation methodologies that address nursing care and origanizational issues.
Prereqs: NUR 60000 with min grade of B

NUR 62000 Adult Health Nursing Practicum II

Class:0 Lab:0 Credit:2
Attributes: Malpractice-MS Nursing
Students apply theories and research related to adult health nursing personnel and organizational spheres of influence. Students begin to develop professional role competencies related to nursing personnel and the healthcare organization. Students use systematic assessment and evaluation methodologies to identify problems and evaluate outcomes.
Prereqs: NUR 60100 with min grade of B

NUR 62200 Primary Care Of The Aging Family

Class:3 Lab:0 Credit:3
This course prepares family nurse practitioner students to assume responsibility for the coordination and delivery of culturally appropriate health services to middle-aged and older families. Students learn to manage stable chronic conditions and acute episodic illnesses commonly encountered in primary care settings. The course emphasizes the conceptual besis for practice and an appreciation for evidence-based care. Students continue to integrate health promotion and health maintenance into the primary care of older clients and their families.
Prereqs: NUR 61100 with min grade of B AND NUR 61300 with min grade of B

NUR 62300 Primary Care Of The Aging Family Practicum

Class:0 Lab:0 Credit:3
Attributes: Malpractice-MS Nursing
Students progress in their ability to master the competencies of the family nurse practitioner, using critical thinking and diagnostic reasoning skills. Students apply knowledge of clinical research, pharmacology physiology and conceptual frameworks to the primary care of middle aged and older clients and families.
Prereqs: NUR 61300 with min grade of B

NUR 63000 Critical Care Nursing II

Class:3 Lab:0 Credit:3

Students analyze theories and research related to critical care nursing personnel and organizational spheres of influence. Clinical nurse specialist competencies focused toward nursing personnel and other healthcare providers and organizations are addressed. The emphasis is on using problem-solving and evaluation methodologies that address nursing care and organizational issues.

Prereqs: NUR 60200 with min grade of B

NUR 63500 Critical Care Nursing Practicum II

Class:0 Lab:0 Credit:2

Attributes: Malpractice-MS Nursing

Students apply theories and research related to critical care nursing personnel and organizational spheres of influence. Students begin to develop professional role competencies related to nursing personnel and the healthcare organization. Students use systematic assessment and evaluation methodologies to identify problems and evaluate outcomes.

Prereqs: NUR 60300 with min grade of B

NUR 65500 Advanced Practice in Nursing Seminar

Class:1 Lab:0 Credit:1

Students analyze movements and trends that influence advanced pratice in nursing. Students dialogue with peers on issues related to advance practice, nursing as a profession and discipline, healthcare and other related topics of interest.

Prereqs: (NUR 60100 with min grade of B AND NUR 60300 with min grade of B AND NUR 61300 with min grade of B) OR NUR 62300 with min grade of B

NUR 65600 Health Care Organization, Policy and Economics

Class:3 Lab:0 Credit:3

Students use theories to understand the vairious models that influence health care policy and organize health care delivery. Students investigate the processes of analyzing and forming health policy. The reciprocal relationship between evidence-based practice and health care policy is explored. Students examine health care economics from a micro and macro perspective and their impact on health care delivery systems. Students also explore issues such as access to health care, health care quality, and cost.

Prereqs: NUR 50100 with min grade of B

NUR 65700 FNP Practicum: Clinical Synthesis

Class:0 Lab:0 Credit:2

Attributes: Malpractice-MS Nursing

This is the final clinical capstone course in a sequence of clinical courses designed to prepare graduate nursing students for FNP practice. Students synthesize and apply theoretical and empirical knowledge in primary care settings with culturally diverse clients and families. Emphasis is given to the clinical management of a wider spectrum of clients and to the more complex, co-morbid conditions seen in family practice.

Prereqs: NUR 62200 with min grade of B AND NUR 62300 with min grade of B AND NUR 65600 with min grade of B

NUR 65800 Adult-Gerontology Clinical Nurse Specialist Practicum III:

Class:0 Lab:0 Credit:2

Attributes: Malpractice-MS Nursing

Clinical Synthesis Students further develop skill in applying theory and evidence related to managing the care of youngest to oldest adult patients across the wellness/illness continuum and influencing nursing personnel and healthcare systems. Students continue to expand professional role competencies related to all of the spheres of adult-gerontology clinical nurse specialist influence. Students continue to use systematic assessment and evaluation methodologies for the purpose of identifying problems and evaluating outcomes amoung youngest to oldest adult patients across the wellness/illiness continuum.

Prereqs: NUR 62000 with min grade of B AND NUR 65600 with min grade of B

NUR 65900 Critical Care Clinical Nurse Specialist Practicum III

Class:0 Lab:0 Credit:2

Attributes: Malpractice-MS Nursing

Students further develop skill in applying theories and research related to managing the care of critical care patients and influencing critical care nuring personnel and organizations. Students continue to expand professional role competencies related to all of the spheres of influence Students identify problems and evaluate the outcomes of care with respect to patients, nursing personnel, and organizations using systematic assessment and evaluation methodologies.
Prereqs: NUR 63500 with min grade of B- AND NUR 65500 with min grade of B- AND NUR 65600 with min grade of B-

NUR 66000 Curriculum Development In Nursing

Class:3 Lab:0 Credit:3
Theories of curriculum development, instructional design, and evaluation of educational programs are applied to the adult learner in nursing. Educational needs are analyzed, and objectives and content are designed.
Prereqs: NUR 50000 with min grade of B

NUR 66200 Teaching Strategies for Nursing

Class:2 Lab:6 Credit:4
Attributes: Malpractice-MS Nursing
Theories of learning, testing and measurement are analyzed. Theory-based teaching strategies are applied in a precepted clinical practice field or academic setting. The effectiveness of teaching activities and instructional materials are evaluated.
Prereqs: NUR 66000 with min grade of B

NUR 67000 Practicum In Nursing Research

Class:1-6 Lab:0 Credit:1-6
Attributes: Malpractice-MS Nursing, Variable Title
Variable credit 1-6. Amount of credit to be determined by nature and extent of the assignment. Students participate in nursing research projects under the guidance of the faculty. This plan of individualized instruction may be used in any area of nursing specialization, education, or administration.
Prereqs: NUR 51000 with min grade of B

NUR 67100 Nursing Executive Practicum I

Class:0 Lab:0-6 Credit:2
Attributes: Malpractice-MS Nursing
This first practicum experience is designed to integrate theory and knowledge learned in the program in the actual practice of the nursing executive role. The practicum provides an opportunity for the student to experience the nurse executive role while receiving ongoing feedback, guidance and support. In this first practicum for the student, the focus is on the professional and operational activities of the nurse executive, such as interviewing, hiring, quality improvement, relationship building, collaboration, and the budgeting process. The student will assess the role and responsibilities of the nurse executive in leading others in the provision of healthcare. In collaboration with the preceptor and the faculty, the student will design a project that will improve safety, quality care, or work environment for nurses.
Prereqs: NUR 65200 with min grade of B AND NUR 65100 with min grade of B AND NUR 65300 with min grade of B

NUR 67200 Nurse Executive Practicum II

Class:0 Lab:0-6 Credit:2
Attributes: Malpractice-MS Nursing
The second practicum experience is designed to integrate theory and knowledge learned in the program in the actual practice of the nurse executive role. The practicum provides an opportunity for the student to experience the nurse executive role while receiving ongoing feedback, guidance and support. In this second practicum, the focus continues to be on the professional and operation activitites of the nurse executive in leading others in the provision of healthcare for the community. In collaboration with the preceptor and the faculty, the student will design a project that will improve access to care, safety and quality of care for the community, or the work environment of the nursing community.
Prereqs: NUR 67100 with min grade of B

OBHR 22100 Principles of Management

Class:3 Lab:0 Credit:3

The fundamentals of organizing a business to succeed. The planning, organization, directing and controlling of business activities in the organizational plan to combine and allocate resources to meet expressed goals is the focus of this courses.
Prereqs: MGMT 10100 with min grade of C OR BUSM 10100 with min grade of C

OBHR 23100 Survey Human Resources

Class:3 Lab:0 Credit:3
Exposure to a wide variety of human resource activities in the business enterprise. Topics include staffing, development, compensation and labor relations. this course is not open to Management majors.
Prereqs: MGMT 10100 with min grade of C OR BUSM 10100 with min grade of C

OBHR 33000 Introduction to Organizational Behavior

Class:3 Lab:0 Credit:3
Junior standing desirable. An integrated social science approach to administrative problems and administrative behavior. Behavior in organizations is examined in the context of psychological and sociological principles with attention given to such problems as motivation, influence, communication, leadership, small group processes, and organizational change. Emphasis is placed on the development of theoretical and empirical skills in diagnosing and responding to interpersonal problems as well as experience-based learning.

OBHR 42300 Negotiations

Class:3 Lab:0 Credit:3
This course provides both the theoretical foundation and practical methods for preforming effective negotiations, persuading, and managing conflict in real life situations. Participants will be able to increase their own knowledge of the field and will be able to improve the outcomes of their own negotiation for themselves and others. The participants will also be able to use their knowledge of conflict management to more effectively resolve interpersonal and inter-group conflicts, both from the perspective of a participant and a third-party.

OBHR 42600 Training and Managerial Development

Class:3 Lab:0 Credit:3
This course focuses on training from a line managerial perspective and on management development, addressed through a consideration of critical personal, interpersonal and term related skills.
Prereqs: OBHR 43100 with min grade of C OR BA 23100 with min grade of C

OBHR 42700 Occupational Safety and Health

Class:3 Lab:0 Credit:3
An examination of the economic, legal and social factors of occupational safety and health issues within an organization. Consideration will be given to the compliance with federal and state laws, safety training programs safety recognition and incentive programs, health education programs and joint labor/management safety committees.

OBHR 43000 Labor Relations

Class:3 Lab:0 Credit:3
A basic course in economic theory or consent of the department required. The course focuses on employee-employer relations under collective bargaining. Attention is also given to topics in trade union development and structure, wage analysis, the problem of economic insecurity, the role of government in labor relations, and employment aspects of the civil rights movement.

OBHR 43100 Human Resource Management

Class:3 Lab:0 Credit:3
A study of the human resource management function in the business firm. Traditional line and staff relationships are discussed. Motivation, job design, and aspects of the legal environment of human resource management are analyzed.

OBHR 43300 Staffing Organizations

Class:3 Lab:0 Credit:3
An examination of the theory and practice of human resource planning, selection, and placement. The course will link human resource planning to organization-wide strategic planning. Selection devices as well as validation and reliability strategies are discussed. The implications of legal requirements for hiring practices are investigated.
Prereqs: OBHR 43100 with min grade of C OR BA 23100 with min grade of C

OBHR 43400 Benefits Administration

Class:3 Lab:0 Credit:3

A study of the historical, financial, motivational, and substantive aspects of employee benefits. Emphasis will be placed on practical administration. Consideration will be given to issues of productivity, union involvement, and future trends in benefit management.

Prereqs: OBHR 43100 with min grade of C- OR BA 23100 with min grade of C-

OBHR 43500 Compensation Management

Class:3 Lab:0 Credit:3

A study of the theory and practice of employee compensation systems considering monetary topics, performance appraisal maintenance, audits of compensation decisions, internal equity, and individual equity will be discussed.

Prereqs: OBHR 43100 with min grade of C- OR BA 23100 with min grade of C-

OBHR 43600 Collective Bargaining

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Practicum

Considers current developments in the areas of collective bargaining, negotiations, and third party mediation and arbitration practices. Consideration will be given to the environments, structure, and processes of collective bargaining. Emphasis is on the practical aspects of labor-management negotiation and proceedings.

Prereqs: OBHR 43100 with min grade of C- OR BA 23100 with min grade of C-

OBHR 43700 Managing Career Development

Class:3 Lab:0 Credit:3

A consideration of individual and organization-centered approaches to career development. The seminal theories of career development. The seminal theories of career management will be discussed in terms of practical applications. Topics in career and life stage development will be explored Career path, dual career families, and careers in emerging fields will be discussed. Methods for diagnosing and planning services for employees from diverse backgrounds and at various occupational levels are considered.

Prereqs: OBHR 43100 with min grade of C- OR BA 23100 with min grade of C-

OBHR 43800 Gender and Diversity in Management

Class:3 Lab:0 Credit:3

This couse will focus on the challenges of managing a work force. Consideration will be placed on identifying and resolving workplace problems attributed to the presence of demographic differences such as gender, race, ethnicity, age and able bodiness background among employees within a given work envireonment. Emphasis is on developing and conducting diversity training programs and reinforcing principles of valuing diversity.

OBHR 43900 Employment Law

Class:3 Lab:0 Credit:3

This course presents and examines the principles of employee-employer relations law. Students will be exposed to various federal and state laws pertaining to employement descrimination based upon demographic differences, such as gender, race, age, ethnicity, and able bodiness. In addition, this course will address issues such as negligent hiring, employment-at-will, wrongful discharge, drug and alcohol testing, and privacy in the workplace.

OBHR 44000

Class:3 Lab:0 Credit:3

OBHR 44100

Class:3 Lab:0 Credit:3

OBHR 44200

Class:3 Lab:0 Credit:3

OBHR 44300 Contemporary Legal and Social Issues in Human Resource Mgmt

Class:3 Lab: Credit:3

This course involves the comprehensive study of contemporary legal and social issues facing managers, with heavy emphasis on human resource management (HRM). Legal and ethical issues relevant to HRM are discussed at a level

where students will develop policies, and practices to assist firms avoid legal action and costly litigation. Defenses to human resource related lawsuits are also discussed. Theories regarding discrimination, harassment and social workplace issues are analized enabling students to apply their knowledge to novel concrete situations. The course assists current and future HR practitioners to effectively manage an organization's legal posture to be congruent with its strategic objective.
Prereqs: OBHR 43100 with min grade of C- OR BA 23100 with min grade of C-

OBHR 44400 Leadership

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Design Projects, ExL-Service Learning
This course is designed to introduce students to leadership theory and practice. Students will learn theories of leadership, practice methods of evaluating effective leadership, and develop a personal leadership action plan. Particular emphasis is placed on developing ethical leadership and trust.
Prereqs: OBHR 33000 with min grade of C OR BA 23000 with min grade of C

OBHR 44500 Team Dynamics

Class:3 Lab:0 Credit:3
Examinines team dynamics from both managerial and member perspectives. Basic concepts of interpersonal behavior, facilitation of effective teamwork, team design, and processes are discussed. Additional topics include virtual, high performance, and cross-cultural teams. Concepts will be applied in team projects and exercises.
Prereqs: OBHR 33000 with min grade of C OR BA 23000 with min grade of C

OBHR 44800 Human Resources Information Systems

Class:3 Lab:0 Credit:3
Attributes: Credit By Exam
This course topics wil include ERP systems, e-business and electronic support of human resource function.

OBHR 49000 Problems in Administrative Science

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Supervised readings and reports in various subjects. Arrange with instructor before enrolling.

OBHR 49500 Internship In Human Resources

Class:1-4 Lab:0 Credit:1-4
Attributes: Experiential Learning, ExL-Internship, Variable Title
A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations.

OBHR 49900 Undergraduate Reseach In Organizational Behavior

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Students will work with a faculty member on a reseach project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills.

OBHR 59000 Problems in Administrative Sciences

Class:0-4 Lab:0 Credit:1-4
Attributes: Variable Title
Supervised readings and reports in various subjects. Arrange with instructor before enrolling.

OBHR 63100

Class:3 Lab:0 Credit:3

OBHR 63300 Human Resource Management

Class:3 Lab:0 Credit:3
Introduction to human resource management for general managers. Emphasis is on the impact of human resource components (e.g. staffing, rewards, labor relations) on the performance of the firm. Case analyses and computerized

data bases are used to illustrate major components of human resource decision making.

OBHR 68100 Managing Behavior in Organizaitons

Class:2-4 Lab:0 Credit:2-4

Individual and group behavior are the central components of components of the study of behavior in organizations. Focus is on the managerial application of knkowledge to issues such as motivation, group process, leadership, organizational design structure, and others. The course employs cases, exercises, discussions, and lectures.

OBHR 69000 Advanced Problems in Organizational Behavior & HR Mgmt

Class:2-4 Lab: Credit:2-4

Attributes: Variable Title

For students in the management graduate program of by consent of school. Advanced investigation in a specific organizational behavior or human resource field at the graudate level.

OLS 10000

Class:1 Lab:0 Credit:1

OLS 10200 Freshman Experience

Class:1 Lab:0 Credit:1

This course provides entering first-year students with less than 60 credits an opportunity to become familar with available departmental and university resources, such as the advising process, the course management system, engage in goal setting, align academic and life goals, explore available career options and develop a plan for success.

OLS 13100 Introduction to Safety & Health Management

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Wellness Education, General Education

Course emphasizes developing an understanding of various topics related to environmental health and safety which oweners, managers, supervisors, and employees need to be aware of in the working environment.

OLS 16300 Fundamentals of Self-Leadership

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education

This course provides studens with an introduction to the Organizational Leadership and Supervision program, and prepares them for the program curriculum. It serves both as the Freshman Experience course, and the fundamental introduction to leadership. It utilization of campus resources, goal setting, valude and role exploration, relationship of academic planning and life goals, discipline specific career exploration, and critical thinking.

OLS 25200 Human Relations in Organizations

Class:3 Lab:0 Credit:3

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations. Special emphasis on typical interpersonal and leadership relationships.

OLS 26200

Class:0 Lab:0 Credit:1-3

OLS 27200 Job Evaluation

Class:2-3 Lab:0 Credit:2-3

A survey of the basic principles and significance of job evaluation. An analysis of current practices and techniques used in job analysis, job descriptions and job evaluation.

OLS 27400 Applied Leadership

Class:2-3 Lab:0-2 Credit:3

An introduction to applied leadership in the context of organizational functions, structures and operations.

OLS 30000 Safety And Health For Engineering Technologies

Class:3 Lab:0 Credit:3

This course explores a wide range of environmental health and safety topics relevant to technologies, engineers, and managers in both public and private sectors. Emphasis is placed on an understanding of identifcation, evaluation, and

control of various hazards which could harm people, property and the environment by using risk assessment.
Prereqs: OLS 13100 with min grade of C-

OLS 30300 Substance Abuse in the Workplace

Class:3 Lab:0 Credit:3
Overviews alcohol and drug problems affecting job performance in the workplace. Topics covered include current concepts of alcoholism and addictions, supervisor's role and responsibilities, work behavior of alcohol and drug abusers. Constructive confrontation and intervention, employee assistance programming, and referral.

OLS 33100 Occupational Safety and Health

Class:3 Lab:0 Credit:3
A presentation of those aspects of occupational safety and health which are most essential to the firstline supervisor. Emphasis is placed on developing an understanding of the economic, legal, and social factors related to providing a safe and healthful working environment.

OLS 33200 Fundamentals of Industrial Hygiene

Class:3 Lab:0 Credit:3
An examination of the industrial hygiene factors instrumental in maintaining a safe and healthful workplace. Special emphasis is given to the recognition, evaluation, and control of occupational health hazards.
Prereqs: MA 14800 with min grade of C AND CHM 11900 with min grade of C

OLS 33300 Environmental Health & Safety Legislation and Standards

Class:3 Lab:0 Credit:3
A study of the laws, codes, and standards which affect the occupational safety and health. Emphasis is placed on an overview of various environmental, health and safety related laws, codes and standards such as: OSHA, DOT, FRA, MSHA, EPA, NFPA, ANSI, NIOSH, ISO, etc.
Prereqs: OLS 33100 with min grade of C

OLS 33400 Fire Protection

Class:3 Lab:0 Credit:3
Explores the principles involved in the protection of people and property from fire and explosion. Basic fire safety terminology, fire chemistry and extinguishment, fire safety references and standards, and fire safety management are presented. Also discussed are control measures for common fire and explosion hazards and the design of buildings in terms of life safety and fire supressive systems.

OLS 33600 Fundamentals of Risk Assessment and Management

Class:3 Lab:0 Credit:3
Explore techniques for assessment and methods for managing the risk associated with occupational injuries, illnesses, deaths and property damage in the workplace. The principle methods include: 1) identifying the exposure to loss; 2) evaluating alternative techniques for treating the exposure; 3) selecting the appropriate techniques; 4) implementing the chosen technique; and 5) monitoring and improving the risk management system.
Prereqs: OLS 33100 with min grade of C AND OLS 33300 with min grade of C

OLS 33700 Introduction to Emergency Management

Class:3 Lab:0 Credit:3
Explore the principles of emergency management in preparing for disruptive events. Students explore the requirements and value of emergency management in preparation for a variety of emergency events likely to occur in either industrial or municipal environments. Students will study the concepts of emergency management including prevention of, mitigation of, preparedness for, response to, and recovery from disruptive emergency events.

OLS 34000 Fundamentals of Construction Safety

Class:3 Lab:0 Credit:3
Overview of construction safety and health regulations. Throughout the course students will participate in discussions pertaining to construction safety issues and will be provided information to evaluate the primary OSHA targeted hazards in the construction industry. OSHA 30 Hr. card. Students will learn to recognize key hazards, be explosed to control technologies and corrective actions for the prevention of an injury, illness, and fatality that commonly occurs at construction sites.

OLS 34100 Fundamentals of Environmental Health

Class:3 Lab:0 Credit:3

This class will be presented as an overview of current issues in community and working environments. Those issues which are most essential to the supervisor/manager will be emphasized. Students will develop an understanding of key Environmental Protection Agency (EPA) regulations such as CERCLA, Clean Air Act and its Amendments, Clean Water Act, and RCRA and typical means to ensure compliance.

Prereqs: OLS 33600 with min grade of C

OLS 34300 Hazardous Materials

Class:3 Lab:0 Credit:3

Explore the practical, safe approach to handling hazardous materials. Topics include: basic chemistry of hazardous materials, hazard classes and toxicology, evaluating risk, selecting correct protective equipment, specific competencies required of persons responding to a hazardous materials emergency, managing an incident, and addressing tactical and strategic issues while minimizing down-time and reducing risk to other workers.

OLS 35000 Applied Creativity for Business and Industry

Class:3 Lab:0 Credit:3

A study of the ways an individual can become more creative and how they can develop an environment which encourages creativity from employees.

OLS 35100 Innovation and Entrepreneurship

Class:3 Lab:0 Credit:3

An in-depth study of innovation in existing organizations, as well as entrepreneurship in start-up businesses, franchises, family-owned firms, and other business formats.

Prereqs: OLS 35000 with min grade of C

OLS 35500 Accident Investigation

Class:3 Lab:0 Credit:3

Explore various approaches for conducting an incident/ accident investigation, methods to determine the causes of incident/accidents, analyses of data gathered as part of the process and proper documentation. Through a series of case studies and examples, students will have the opportunity to identify the corrective action steps for preventing future occurences and presenting those recommendations to management for implementation.

Prereqs: OLS 33100 with min grade of C

OLS 36000

Class:3 Lab:0 Credit:3

OLS 36300 Fundamentals of Self-Management

Class:3 Lab:0 Credit:3

This course compares and contrasts several frameworks for self-management, and provides students with the opportunity to study these frameworks to achieve success in life, school and career.

OLS 36400 Professional Development Program

Class:3 Lab:0 Credit:3

A survey course covering many professional facets relative to entering the work force upon graduation. Major areas addressed include resume preparation, interview techniques, development of job search plans, social skills, and analysis of career fields and opportunities.

OLS 37400 Supervision Management

Class:3 Lab:0 Credit:3

Introduction to and overview of the fundamental concepts of supervision. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, his relations with others, and his personal development.

Prereqs: OLS 25200 with min grade of C

OLS 37500 Training Methods

Class:3 Lab:0 Credit:3

Principles, practices, and methods of employee training. Introduction to systematic training program design,

development, and evaluation. Emphasis is on the supervisor as a trainer.
Prereqs: OLS 25200 with min grade of C

OLS 37600 Human Resource Issues

Class:3 Lab:0 Credit:3
Analysis and discussion of case problems concerning typical leadership and personnel situations that impact upon the supervisor/manager. Emphasis directed toward development to attitude, philosophy, analytical ability, and problem-solving skills within the working environment.
Prereqs: OLS 25200 with min grade of C

OLS 37800 Labor/Management Relations

Class:3 Lab:0 Credit:3
An introduction to and overview of the fundamental concepts of labor relations, collective bargaining, and dispute resolution procedures. A comparative analysis is used to assess some of the legal economic, and political structures of labor relations.
Prereqs: OLS 25200 with min grade of C

OLS 38400 Leadership Process

Class:3 Lab:0 Credit:3
An in-depth study of a sequence of manager actions that influence employees to achieve desired performance results. How these manager actions are transformed by employees into desired performance also is covered.
Prereqs: OLS 25200 with min grade of C AND OLS 16300 with min grade of C

OLS 38700 Emergency Planning and Exercises

Class:3 Lab:0 Credit:3
Explore the development of emergency plans and exercises for organizations. Students will learn requirements imposed by the Occupational Safety and Health Administration (OSHA) for emergency plans. Students will study the linkage between emergency plans through emergency preparedness exercises. Students will develop an onsite ememgency plan, for an actual organization, and an emergency exercise to test the plan.
Prereqs: OLS 33100 with min grade of C AND OLS 33700 with min grade of C

OLS 38900 Emergency Management Program

Class:3 Lab:0 Credit:3
Explore hazard analysis and develop a mitigation plan for an actual organization. The class wil examime current plans and practices developed for site, community or countrywide use. Last course in the Emergency Management Certificate.
Prereqs: OLS 38700 with min grade of C

OLS 39900 Supervision Topics

Class:1-6 Lab:0 Credit:1-6
Attributes: Variable Title
Hours and subject matter to be arranged by staff. (May be repeated for credit.)

OLS 41500 Introduction to Environmental Management

Class:3 Lab:0 Credit:3
This class will provide an introduction to current issues and concepts in environmental management including an overview of environmental policy, necessary measures to control and mitigate environmental impacts. and key Environmental Protection Agency (EPA) regulations such as CERCLA, Clean Air Act and its Amendments, Clean Water Act, and typical means to ensure compliance.
Prereqs: OLS 34100 with min grade of C

OLS 42100 Psychology and Sociology of Safety

Class:3 Lab:0 Credit:3
Explore contemporary approaches used to influence employees' safety related behaviors using the principles of psychology amd sociology. Case studies of behavior and operations that resulted in both human and material loss will be studied.
Prereqs: OLS 33100 with min grade of C

OLS 43000 Environmental Health and Safety Management

Class:3 Lab:0 Credit:3

Designing and developing a management system to ensure safety and health for employees and environment where they work. Survey of designing a management system to ensure safety and health for employees operating processess and equipment, through the use of control measures that includes hazard identification, risk assessment, and job safety analysis. The students will design a safety, health and environmental system that include the techniques for management of the designed system.

Prereqs: OLS 33100 with min grade of C AND OLS 33600 with min grade of C AND OLS 35500 with min grade of C

OLS 43300 Analysis and Design of Safety Systems

Class:3 Lab:0 Credit:3

A comprehensive survey of the analysis and design of safety system techniques for processes, equipment and machinery through the use of such control measures as hazard identification, risk assessment, and job safety analysis. (To enroll in this course you must have had six credit hours in safety-related courses or consent of instructor.)

OLS 45400 Gender and Diversity in Management

Class:3 Lab:0 Credit:3

This course will provide supervisors with the skills required for managing a diverse work force. The course will focus on helping supervisors identify and solve workplace problems arising from cultural, racial, gender, and language differences.

Prereqs: OLS 25200 with min grade of C

OLS 46800 Personnel Law

Class:3 Lab:0 Credit:3

A study of employment laws specially affecting employer-employee relationships. The purpose of the course is to provide the supervisor with a summary of current employee relations laws and a practical approach to dealing with daily employer-employee legal concerns. Topics include laws related to discrimination based on sex, race, age, handicap, hiring and discharge of workers, drug and alcohol testing, privacy in the workplace, wages, ERISA, and other issues on employee rights and employer responsibilities.

Prereqs: OLS 25200 with min grade of C

OLS 47200 Seminar in Safety

Class:3 Lab:0 Credit:3

(Student will need nine hours of safety related courses prior to taking this class.) An examination of various topics which are relevant to the safety field. Case studies of unique and/or special safety problems, current events relating to safety, and ethics in safety are emphasized.

OLS 47400 Conference Leadership Training

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Practicum

Understanding the role of the conference in the work world, with practical applications of the various techniques of conference leadership, and an understanding of group problem-solving in the conference situation.

Prereqs: COM 11400 with min grade of C

OLS 47700 Conflict Management

Class:3 Lab:0 Credit:3

(This course requires a Junior standing or consent of the instructor.) A study of the alternative means of settling political and personal disputes between parties by methods generally outside the traditional court systems. Students will investigate the theoretical and practical aspects of communication, negotiation, mediation, arbitration, and other third-party strategies to reach agreements.

OLS 47900 Staffing Organizations

Class:3 Lab:0 Credit:3

An applications-oriented study of key concepts in staffing organizations, including principle and issues in conduction job analysis; preparing job descriptions/specifications and screening/selecting employees. Special emphasis on the design, validation and operation of high-volume staffing systems.

Prereqs: OLS 37600 with min grade of C

OLS 48200 Labor Arbitration

Class:3 Lab:0 Credit:3

Permission of instructor if prerequisite has not been met Student will learn how to analyze disciplines and discharge cases in light of the just cause requirements. They will also be able to evaluate contract language against basic standards and legal principles. In addition, they will be able to write an arbitrator's opinion and award.

Prereqs: OLS 37800 with min grade of C

OLS 48300 The Common Law of the Workplace

Class:3 Lab:0 Credit:3

Note: Permission of the instructor if prerequisite has not been met. Satutory and individual rights are expanding significantly and supervisors must have the expertise to deal with these new workplace issues. The intent of this course will be to present cases reflecting how supervisors deal with current workplace issues.

Prereqs: OLS 37800 with min grade of C

OLS 48500 Leadership Team Development

Class:3 Lab:0 Credit:3

An in-depth study of self-directed work teams and team processes in the work setting with a view to understanding team functions under varying task conditions. Especially emphasized will be the leadership of teams for effective performance and maximum member satisfaction. This course deals extensively with maintenance and task behaviors of team members.

Prereqs: OLS 25200 with min grade of C AND OLS 38400 with min grade of C

OLS 48600 Management of Change

Class:3 Lab:0 Credit:3

A survey of the concepts that provide a foundation for the understanding of leadership and its relationship to the management of organizational change, with special emphasis on managing the human side of quality improvements.

Prereqs: OLS 25200 with min grade of C AND OLS 38400 with min grade of C

OLS 48700

Class:3 Lab:0 Credit:3

OLS 49100 Internship Program

Class:0 Lab:0 Credit:1-3

Attributes: Experiential Learning, ExL-Internship

A practicum designed to combine University study with work experience directly related to the student's plan of study. To recieve credit for the internship must incorporate the concepts taught in the Organizational Leadership courses. Department approval required for Registration. Repeatable for credit. This 1-3 credit hour course may be repeated up to a total of 6 credits.

OLS 49300 Senior Project - Phase I

Class:1 Lab:0 Credit:1

This course focuses on the methodology required to complete a Senior Project in an organization of the student's choice. Students will finalize their Senior Project topic, understand the Senior Project process, and begin their Senior Project proposal.

OLS 49700 Senior Project

Class:2 Lab:0 Credit:2

Attributes: Experiential Learning, ExL-Design Projects

This course focuses on the implementation and completion of the in an organization of the student's choice. Students will finalize their proposal and methodology, by using the process learned in - Phase I and from previous course material, as well as completing the project.

Prereqs: OLS 49300 with min grade of C-

OLS 55000 Managing Diversity

Class:3 Lab:0 Credit:3

This course is a senior undergraduate and graduate course designed to provide students with the comprehensive study of contemporary diversity issues facing supervisors and human resource professionals. Issues relevant to supervisors and human resource professionals are discussed at a level where students will be able to manage a diverse workforce and develop policies and practices to assist organizations to avoid problems and litigation.

OLS 57400 Managerial Training and Development

Class:3 Lab:0 Credit:3

(Student required to have Senior standing or consent of instructor.) Review of current managerial education and development theories and practices; discussion of fundamental social, economic, and political changes affecting business and the work of managing; implications of these changes for individual manager development and continued growth.

OLS 57600 Advanced Topics in Human Resource Management

Class:3 Lab:0 Credit:3

Current topics and issues in the legal, behavioral and technical environment of human resource management. Topics may include employment practices, labor management relations wage and salary administration, treatment of employees on the job, or productivity-improvement programs. Employs seminar format with emphasis on applications research. Masters students or senior status with instructor approval.

OLS 57700

Class:3 Lab:0 Credit:3

OLS 58000 Interpersonal Skills for Leaders

Class:3 Lab:0 Credit:3

Development and improvement of interpersonal and group dynamic skills for effective leadership in organizations. Emphasis on action learning and real-world application of skills. Open to all graduate students with specail consideration give to Seniors with a 3.0 GPA and School of Technology graduate students. Course may be offered as traditional, distance or blended format.

OLS 58100 Workshop in Organizational Leadership and Supervision

Class:1-8 Lab:0 Credit:1-8

Attributes: Variable Title

Advanced study of technical and professional topics. Emphasis is on a new developments relating to technical, operational, and training aspects of industry and technology education. Course may be offered in a traditional, distance or blended format. Course format may vary depending upon the topic of the course.

OLS 58300 Coaching and Mentoring in Organizations

Class:3 Lab:0 Credit:3

This course explores issues and practices in technologically-driven organizations pertaining to the roles and functions that coaching and mentoring play in employee development. A 'best practices' approach, utilizing the case methods, is emphasized. Presented from the point of view of a human resource manager/leader, the focus of the course is on identifying coaching opportunities, enhancing communication skills, developing and implementing coaching and mentoring strategies, and evaluating the outcomes of these strategies. Attention is directed to facilitating personal coaching mentoring skills. Course my be offered in traditional, distance or blended format. Graduate student status or senior status with consent of instructor.

OLS 58800 Strategic Planning and Marketing for Technology

Class:3 Lab:0 Credit:3

This course examines concepts, models, and methods useful for developing strategic initiatives in industrial/ technical business environments. Focuses on planning concepts including industry structure, strategic mission, organizational structures, competitor and analysis, and related areas. Graduate status or senior standing with consent of instructor. Graduate students without an OLS background maybe required to take leveling courses.

OLS 58900 Leadership And Ethics

Class:3 Lab:0 Credit:3

An examination of ethical, legal and policy issues facing business and technology leaders. Topics include ethical decision making, corporate social responsibility, codes of ethics, public policies and government regulations, international business practices, technology innovation, risk management in a global environment, and specific areas of law - employment, health and safety, environmental, contract, warranties and liabilities, intellectural property technology law and international laws and regulations. Graduate student standing or senior status with instructor consent. Graduate students without OLS background may be required to take some leveling courses.

OLS 59000 Individual Research Problems in Supervision and Personnel

Class:0-6 Lab:0 Credit:1-6
Attributes: Variable Title
Students required to have the consent of the instructor. Opportunity to study specific problems in the field of supervision and personnel under the guidance of a qualified faculty member within the department. Does not include thesis work.

ORGB 43000

Class:3 Lab:0 Credit:3

ORGB 43100

Class:3 Lab:0 Credit:3

ORGB 43200

Class:3 Lab:0 Credit:3

ORGB 49000

Class:3 Lab:0 Credit:3

PE 50300

Class:3 Lab:0 Credit:3

PE 50500

Class:3 Lab:0 Credit:3

PE 50700

Class:3 Lab:0 Credit:3

PHIL 10100 The History of Philosophy

Class:3 Lab:0 Credit:3
An introduction to the problems, methods, and main traditions of philosophy through readings in Greek, medieval, modern, and comtemporary philosophy.

PHIL 10600 Human Experience in Art Literature, Music, and Philosophy

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
An introduction to the problems, methods, and main traditions, experiences and ideas which lie at the heart of all humanities (e.g.love, death, justice, duty, nature, beauty, and deity) using as material specimens of the visual arts, music, literature, and philosophy.

PHIL 10700 Freshman Experience - English & Philosophy

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
This course is required of all entering freshman and transfer students with less than 60 credits. This course will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline specific career exploration and critical thinking. The course also serves well as the departmental Fresheman Expereince since it introduces majors to the disciplines of art, music and philosophy.

PHIL 11000 Introduction to Philosophy

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN
The basic problems and types of philosophy, with special emphasis upon the problem of knowledge and nature of reality.

PHIL 11100 Ethics

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN
A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of non-moral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment.

PHIL 12000 Critical Thinking

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
Course designed to develop reasoning skills and analytic abilities, based on an understanding of the rules or forms as well as the content of good reasoning. The course will cover moral, legal, and scientific reason, in addition to ordinary problem solving.

PHIL 15000 Principles of Logic

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
A first course in formal deductive logic; mechanical and other procedures for distinguishing good arguments from bad. Truthtables and proofs for sentential (Boolean) connectives, followed by quantificational logic and relations. Although metatheoretic topics are treated, the emphasis is on methods. -- NOTE: Students who wish may use PHL 150 as an alternative to a Mathematics requirement when their major allows it.

PHIL 20600 Philosophy of Religion

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN
The course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism and life after death.

PHIL 21900 Introduction to Existentialism

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education
A survey of both the philosophical and more literary writings of the existentialist movement. Readings will be chosen from among the following writers: Kierkegaard, Nietzche, Dostoevsky, Kafka, Marcel, Heidegger, Camus, Sartre, Jaspers, de Beauvoir, Ortega, and Merleau-Ponty.

PHIL 22100 Philosophy of Science

Class:3 Lab:0 Credit:3
An introduction to the scope and methods of science and to theories of its historical development. Topics include scientific revolutions, theories of scientific methods, the nature of scientific discovery, explanation, science, and values.

PHIL 29300 Selected Topics in Philosophy

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
The critical examination of some special topic or topics in philosophy.

PHIL 30100 History of Ancient Philosophy

Class:3 Lab:0 Credit:3
A survey of Greek pholosophy from its beginning in the Milesian school through Presocratics to Plato and Aristotle.

PHIL 30300 History of Modern Philosophy

Class:3 Lab:0 Credit:3
Concentrates on the major philosophical writers from the Renaissance to the beginning of the 19th century: Descartes, Hobbes, Spinoza, Locke, Lebnitz, Berkeley, Hume, Kant. Some in other areas, e.g. Galileo, Newton, Calvin, are also considered.

PHIL 30400 Nineteenth Century Philosophy

Class:3 Lab:0 Credit:3

A study of the significant issues raised by such ninetheeth century philosophers as Fiche, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzshe, Kierkegaard, and James.

PHIL 30600 Twentieth-Century Philosophy

Class:3 Lab:0 Credit:3

A critical examination of the main currents of contemporary philosophical thought, such as pragmatism, analytic philosophy, phenomenology and existentialism, and other recent developments. This course will cover selected works of such philosophers as Russell, Wittgenstein, Peirce, Whitehead, Heidegger, and Sartre.

PHIL 30H00

Class:3 Lab:0 Credit:3

PHIL 32400 Ethics For the Professions

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education

A study of the ethical problems faced by professionals in engineering, management, and other professional fields. Topics include: ethical theories, moral decision-making, social responsibility, employee rights and responsibilities, the environment, truth telling, affirmative action, privacy and confidentiality, whistle-blowing, and deception.

PHIL 32500 Ethics and Public Health

Class:3 Lab:0 Credit:3

A study of the ethical issues and problems of public health and health care. Within public health, such topics will be considered as; ethical theories; laws, codes, values, and moral decision making; the health care system; issues of the health care professional; health care professionals and patients; the sanctity of life; biomedical research and human experimentation; health policy; and allocation of resources.

PHIL 49000 Advanced Topics in Philosophy

Class:3 Lab:0 Credit:3

Attributes: Variable Title

An advanced study of a significant topic in philosophy.

PHIL 59000 Directed Reading in Philosophy

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

May be repeated for credit. Admission by consent of instructor, and must be preceded by six hours of philosophy, plus basic work in area to be investigated. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls.

PHIL P223

Class:3 Lab:0 Credit:3

PHIL P310

Class:3 Lab:0 Credit:3

PHIL P342

Class:3 Lab:0 Credit:3

PHYS 10700 Conceptual Physics for Humanities

Class:2 Lab:2 Credit:3

Attributes: TransferIN

A descriptive, non-mathematical explanation of physical laws and theories, phenomena, and practical applications. Topics: mechanics, properties of matter, heat and waves.

PHYS 10800 Conceptual Physics for Humanities

Class:2 Lab:2 Credit:3

A descriptive, non-mathematical explanation of physical laws and theories, phenomena and practical applications. Topics: electricity, magnetism, light, and modern physics.

PHYS 11300

Class:0 Lab:2 Credit:1
Attributes: Lab Science

PHYS 15200 Mechanics

Class:4 Lab:2 Credit:4
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN
Statics, uniform and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; hydrostatics and hydrodynamics; simple harmonic motion; wave motion and sound.
Prereqs: MA 16300 with min grade of C-

PHYS 19400 Freshman Physics Orientation

Class:1 Lab:0 Credit:1
Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education
Designed to provide incoming physics majors with the academic, survival, and computational skills to make a successful transition from high school to college. Discussion of opportunities within the Department including degree options, co-op program, undergraduate research, careers in physics, use of spreadsheet software, graphing packages, and drawing programs. Attendance and performance on assigned projects are the basis of the pass/no pass requirement.

PHYS 21000 Nature of Physical Science I

Class:2 Lab:3 Credit:3
Attributes: Lab Science
An integrated, activity-based introduction to some of the basic phenomena, concepts, principles, and reasoning in physics and chemistry. This course is designed for non- science majors and is especially appropriate for education majors since many of the activities can be readily modified for use with younger students. Couse does not count toward degrees in science, engineering or technology.

PHYS 22000 General Physics I

Class:3 Lab:2 Credit:4
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN
Mechanics, heat and sound, for science students not specializing in physics, chemistry, or engineering.
Prereqs: MA 14800 with min grade of D- OR MA 15400 with min grade of D-

PHYS 22100 General Physics II

Class:3 Lab:2 Credit:4
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN
Electricity, light, and modern physics, for science students not specializing in physics, chemistry, or engineering.
Prereqs: PHYS 22000 with min grade of D-

PHYS 25100 Heat, Electricity, and Optics

Class:5 Lab:2 Credit:5
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN
Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, AC/DC circuits, electromagnetism, magnetic properties of matter; geometrical and physical optics.
Prereqs: PHYS 15200 with min grade of D- AND MA 16400 with min grade of D-

PHYS 26100 Electricity Optics

Class:5 Lab:0 Credit:4
Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, AC/DC circuits, electromagnetism, magnetic properties of matter; geometrical and physical optics.
Prereqs: PHYS 15200 with min grade of D- AND MA 16400 with min grade of D-

PHYS 27000 Special Topics in Physics

Class:0-5 Lab:0-2 Credit:1-5
Attributes: Variable Title

Admission by special permission. May be repeated for credit. Specialized topics in physics.

PHYS 29400 Sophomore Physics Seminar

Class:1 Lab:0 Credit:1

Required of sophomores majoring in any physics curriculum. Discussion of undergraduate research opportunities, upper- division courses, career opportunities, laboratory safety, use of the library including physics journals and topics of current interest in physics.

Prereqs: PHYS 25100 with min grade of C-

PHYS 30500 Intermediate Mathematics Physics

Class:3 Lab:0 Credit:3

An introduction and review of the mathematical techniques and procedures used in intermediate and advanced physics courses. Applications involving vector calculus, linear algebra, complex analysis, Fourier series and transforms, and second-order linear differential equations will be discussed. The course provides additonal mathematical preparation for PHYS 310, 311, 322, 330, 342, and 515.

Prereqs: PHYS 25100 with min grade of D- OR PHYS 26100 with min grade of D-

PHYS 30800 Scientific Computation

Class:3 Lab:0 Credit:3

An introduction to scientific problem solving using a computer. Students will be introduced to numerical methods for evaluating integrals and for solving algebraic and differential problems in physics.

Prereqs: PHYS 15200 with min grade of D-

PHYS 30900 Scientific Computation II

Class:3 Lab:0 Credit:3

A second semester course in using modern computational methods to solve physics problems numerically. PHYS 30900 uses the methods developed in PHYS 30800 to address problems in mechanics, electricity and magnetism and quantum physics.

Prereqs: PHYS 30800 with min grade of D-

PHYS 31000 Intermediate Mechanics

Class:4 Lab:0 Credit:4

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy; elements of hydromechanics and elasticity.

Prereqs: MA 26400 with min grade of D- AND PHYS 15200 with min grade of C-

PHYS 31100 Quantum Physics I

Class:3 Lab:0 Credit:3

This course discusses the limits of classical physics and the development of quantum physics. Topics will include: Planck's quantization hypothesis, the photoelectric effect, the wave theory of matter, the Uncertainty Principle, Bohr's atomic model, the Schroedinger equation, wave functions, the Hydrogen atom, operator methods, and the quantized simple harmonics oscillator.

Prereqs: MA 26400 with min grade of D- AND PHYS 34200 with min grade of D-

PHYS 32000 Computational Physics: Electromagnestism

Class:1 Lab:0 Credit:1

Attributes: Variable Title

A companion course to PHYS 330. Computational methods will be introduced and used to solve problems associated with electromagnetic phenomenon, mechanics, or statistical mechanics and quantum physics. Maxwell's equations will be solved for various geometries, under various boundary conditions.

PHYS 32200 Intermediate Optics

Class:3 Lab:0 Credit:3

Attributes: Engr Tech Elective

Modes of vibration of a system; emission and absorption of waves; properties of sound, electromagnetic, and particle waves including phenomena of refraction, reflection, dispersion, diffraction, interference, polarization and double refraction.

Prereqs: PHYS 25100 with min grade of D- OR PHYS 26100 with min grade of D-

PHYS 32700 Modern Physics Survey

Class:3 Lab:2 Credit:4

PHYS 152 and 251/261 or equivalent, or the consent of the instructor A survey of modern physics topics, intended primarily for non-physics majors, organized in a mixture of lectures and activity-based laboratories. Topics will include: special relativity; pre-quantum phenomena; the Bohr aromic model; multi-electron atoms; cosmology and the Big Bang; radioactivity, fission, and fusion.

Prereqs: PHYS 15200 with min grade of AND PHYS 25100 with min grade of AND PHYS 26100 with min grade of

PHYS 33000 Intermediate Electricity and Magnetism

Class:3 Lab:0 Credit:3

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Prereqs: PHYS 25100 with min grade of D- OR PHYS 26100 with min grade of D- AND MA 26400 with min grade of D-

PHYS 34200 Modern Physics

Class:3 Lab:0 Credit:3

A survey of basic concepts and phenomena in atomic, nuclear, and solid state physics; special and general relativity.

Prereqs: PHYS 25100 with min grade of D- OR PHYS 26100 with min grade of D-

PHYS 34300 Modern Physics Laboratory

Class:0 Lab:2 Credit:1

Attributes: Engr Tech Elective, Lab Science

Laboratory experiments to accompany PHYS 34200.

PHYS 38000 Advanced Physics Laboratory

Class:2 Lab:2 Credit:3

An introduction and survey of modern experimental topics in advanced physics, including areas such as: Interferometry Zeeman Effect, Compton Effect, Nuclear Magnetic Resonance Nuclear counting and half-life measurements. An introduction to data analysis will also be included.

Prereqs: PHYS 31000 with min grade of D- AND PHYS 34200 with min grade of D- AND PHYS 34300 with min grade of D- AND PHYS 33000 with min grade of D-

PHYS 40200 Senior Research I

Class:1 Lab:2 Credit:2

Attributes: Experiential Learning, ExL-Design Projects

Experiential learning undergraduate research course in physics directed and mentored by physics faculty during student's penultimate semester. Background preparation, specialization training, and initial work towards completion

PHYS 40300 Senior Research II

Class:2 Lab:2 Credit:3

Attributes: Experiential Learning, ExL-Undergraduate Research

Experiential learning undergraduate research course in physics directed and mentored by physics faculty during student's final semester. Continuation and completion of work begun in Senior Research I; preparation and presentation of results in multiple formats.

Prereqs: PHYS 40200 with min grade of C-

PHYS 41200 Quantum Physics II

Class:3 Lab:0 Credit:3

A continuation of the concepts introduced in PHYS 311. including more advanced topics in modern quantum mechanics. Topics will include: Addition of angular momenta, scattering theory, identical particles, time-independent and time dependent perturbation theory, and the WKB approximation.

Prereqs: PHYS 31100 with min grade of C-

PHYS 46900 Research in Physics

Class:0-5 Lab:0-12 Credit:1-5

Attributes: Experiential Learning, ExL-Undergraduate Research, Variable Title
Undergraduate research which will qualify as an Experiential Learning experience. Admission by special permission. May be repeated for credit.

PHYS 47000 Special Topics in Physics

Class:0-5 Lab:0-6 Credit:1-5
Attributes: Variable Title
ADMISSION BY SPECIAL PERMISSION. May be repeated for credit.

PHYS 49400 Junior-Senior Physics Seminar

Class:1 Lab:0 Credit:1
Major emphasis on developing skills in oral and written presentations by students. The subject matter can be library material and/or accomplishments in undergraduate or co-op research.
Prereqs: PHYS 29400 with min grade of C- AND PHYS 33000 with min grade of C-

PHYS 51000 Physical Mechanics

Class:3 Lab:0 Credit:3
Mechanics of particles, rigid bodies, and vibrating systems; elasticity and hydrodynamics; theory of relativity.
Prereqs: PHYS 31000 with min grade of B- AND PHYS 33000 with min grade of B- AND MA 26200 with min grade of B-

PHYS 51500 Thermodynamics

Class:3 Lab:0 Credit:3
Fundamental concepts of heat; theory and practice of heat measurements; first and second laws of thermodynamics, with applications.
Prereqs: PHYS 31000 with min grade of B- AND MA 36200 with min grade of B-

PHYS 51700 Statistical Physics

Class:3 Lab:0 Credit:3
Kinetic theory of gases third law of thermodynamics, and the principles of statistical mechanics, with applications to the quantum theory of radiation and the theory of specific heats.
Prereqs: PHYS 34200 with min grade of B- AND PHYS 51000 with min grade of B-

PHYS 53000 Electricity and Magnetism

Class:3 Lab:0 Credit:3
An introductory theoretical course. Vector analysis; electrostatic problems; theory of dielectrics; theory of conduction; thermoelectric and photoelectric phenomena; electromagnetic effects due to steady and changing currents; magnetic properties of matter; Maxwell's equations; radiation.
Prereqs: PHYS 33000 with min grade of B-

PHYS 54500 Solid State Physics

Class:3 Lab:0 Credit:3
Crystal structure; lattice vibrations and electronic band structure of crystals; electrical, optical, and thermal properties of solids; transport and other nonequilibrium phenomena in uniform and nonuniform materials.
Prereqs: PHYS 55000 with min grade of B-

PHYS 55000 Introduction to Quantum mechanics

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Brief historical survey of the development of quantum mechanics; waves in classical physics, wavepackets, uncertainty principle wave functions, operators, expectation values of dynamical observables: Schrodinger equation with application to one-dimensional problems, the hydrogen atom; electron spin, periodic table; selected topics in perturbation theory, scattering theory and compounding angular momenta. Designed for students needing quantum mechanics background for specialty courses such as PHYS 545, 556, and 564.
Prereqs: (PHYS 31000 with min grade of B- AND PHYS 33000 with min grade of B- AND PHYS 34200 with min grade of B- AND MA 36200 with min grade of B- OR MA 51000 with min grade of B-)

PHYS 55600 Introductory Nuclear Physics

Class:3 Lab:0 Credit:3
Theory of relativity, brief survey of systematics of nuclei and elementary particles, structure of stable nuclei, radioactivity, interaction of nuclear radiation with matter, nuclear reactions, particle accelerators, nuclear instruments, fission, nuclear reactors.
Prereqs: PHYS 55000 with min grade of B-

PHYS 56400 Introduction to Elements Particle Physics

Class:3 Lab:0 Credit:3
This course brings the student up to the current status of research in elementary particle physics. The focus of the course is the construction of the Standard Model with emphasis on the electroweak theory. The seminal experiments that confirmed the predictions of the Standard Model is presented. The solar neutrino problem, the search for non-zero neutrino masses, and the efforts to construct a theory which unifies all interactions including gravity is discussed.
Prereqs: (PHYS 36000 with min grade of B- OR PHYS 46000 with min grade of B- AND PHYS 46100 with min grade of B- OR PHYS 55000 with min grade of B-)

PHYS 57100 Selected Topics in Physics.

Class:3 Lab:0 Credit:3
Attributes: Variable Title
Specialized topics in physics selected from time to time.

PHYS 59000 Readings And Research

Class:1-3 Lab:0-3 Credit:1-3
Attributes: Lab Science, Variable Title
Readings and research in Physics. Permission of instructor required.

PHYS 60000 Methods of Theoretical Physics I

Class:3 Lab:0 Credit:3
Graduate Students standing in physics or consent of instructor. Mathematical background for subsequent studies of advanced mechanics, electrodynamics, and quantum theory. Topics treated include functions of complex variable, ordinary and partial differential equations, sigenvalue problems and orthogonal functions. Green's functions, matrix theory, and tensor analysis in three and four dimensions.

PHYS 60100 Methods of Theoretical Physics II

Class:3 Lab:0 Credit:3
A continuation of PHYS 600.
Prereqs: PHYS 60000 with min grade of B-

PLSH 10100 Polish Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1
Introduction to Polish.

PLSH 10200 Polish Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2
Continuation of PLSH 101 - Polish Level I.
Prereqs: PLSH 10100 with min grade of D-

PLSH 20100 Polish Level III

Class:3 Lab:1 Credit:3
Students develop communicative competence in listening, speaking, reading and writing Polish. Completion of grammatical cases. Critical analysis of short stories, poems and selected newspaper articles. Continued emphasis on viewing and evaluating Polish Cinema.
Prereqs: PLSH 10200 with min grade of D-

PLSH 20200 Polish Level II

Class:3 Lab:1 Credit:3

Students develop communicate competence in listening, speaking, reading and writing Polish. Completion of grammatical cases. Critical analysis of short stories poems, and selected newspaper articles. Continued emphasis on viewing and evaluating Polish cinema.
Prereqs: PLSH 20100 with min grade of D-

POL 10000 American Public Affairs

Class:3 Lab:0 Credit:3
A survey of current public affairs in America designed to help students become conscious of the societal issues of our times.

POL 10100 American Government and POlitics

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education, TransferIN
A study of the nature of democratic government, the U.S. Constitution, federalism, civil rights, political dynamics, the presidency, Congress, and the judiciary.

POL 10200 American Government In Practice

Class:2 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Practicum, ExL-Undergraduate Research
This course is intended to give students an opportunity to study the nature of democratic government, the U.S. Constitution, federalism, civil liberties and rights, political dynamics, the presidency, Congress, and the judiciary.

POL 10400 Political Participation

Class:3 Lab:0 Credit:3
An introduction to the major dimensions of citizen politics in America: voting behavior, political socialization of children and adults, political opinion and culture, leadership recruitment and partisan participation.

POL 12000 Introduction to Public Policy and Public Administration

Class:3 Lab:0 Credit:3
This course provides an introduction to the fields of public policy and public administration. Processes of policy formation and administration are examined. Different approaches to evaluating and improving public policies are discussed.

POL 12200 Intorduction to Political Science

Class:3 Lab:0 Credit:3
This course provides a general introduction to the major concepts and perspectives of political science. It presents an introductory examination of principles, organization, processes, functions of government, and the interplay of political forces. Included will be consideration of the formation of political communities, political participation, policy making, compliance, legitimacy, political development and types of political systems. Both empirical and normative problems will be addressed.

POL 13000 Introduction to International Relations

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education, TransferIN
An analysis of the fundamentals of international law, organization, and politics particularly as relevant to contemporary international relations.

POL 14100 Governments of the World

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education
Introductory survey of major foreign governments, including the governments of a western democracy, a communist state, and a developing country, with special attention to the historical, cultural, and constitutional development, the organization and ideologies of political parties, and current political problems.

POL 19000 The Politics of Change

Class:3 Lab:0 Credit:3
An introductory survey of the political forces at play in the processes of social, economic, and political change. Among

topics to be considered are the politics of: the post-industrial revolution, environmental control, civil rights, the role of women in society, international cooperation and conflict. Emphasis will be placed on the political forces and processes involved in change and the resultant public policies.

POL 20000 Introduction to the Study of Political Science

Class:3 Lab:0 Credit:3

Attributes: Gen Ed-Freshman Experience, Gen Ed-Univ/Personal Resources, General Education, TransferIN

Introductin to the basic concepts and methods of political science. Basic concepts including among others, power justice, authority, ideology, and democracy and a variety of quantitative and qualitative methods of analysis will be explored. This course is an introduction to what it means to think about and practice the discipline of political science. What kinds of things do political scientists study and how do they study them?

POL 20200 Introduction to Political Thinking

Class:3 Lab:0 Credit:3

An introductory study of political concepts and systems of political thought from classical to modern times.

POL 22100 Introduction to Science and Government

Class:3 Lab:0 Credit:3

A survey of major policy issues associated with scientific and technological advances. Special attention is focused upon the organization of science and technology, the determination of science and policy and the role of government in support of research and development.

POL 22300 Introducation to Environmental Policy

Class:3 Lab:0 Credit:3

This course will study decision making as modern societies attempt to cope with environmental and natural resources problems. The course focuses on the American political system,with some attention to international issues. Current policies and issues will be examined.

POL 23100 Introduction to United States Foreign Policy

Class:3 Lab:0 Credit:3

This course is designed to introduce students to the major themes and issues in contemporary United States foreign policy. Lectures, discussions and readings will examine such areas as United States relationships with the major powers, the Third World and international organizations. Students with credit in HIST 231 - Introduction to United States Foreigh Policy may not receive credit in this class.

POL 30000 Introduction to Political Analysis

Class:3 Lab:0 Credit:3

An introduction to the study of politics, its basic concepts and major areas of concern; also review of important research techniques, including methods of data collection and analysis.

Prereqs: POL 10100 with min grade of D-

POL 30500 Technology and Society

Class:3 Lab:0 Credit:3

An introduction to the interaction of technology and society the impact of enigineering and technological solutions, and the role of professionals. This class will focus on contemporary societal and global topics and theses such as: Enviornmental issues involving sustainable development, design for recycling, and other critical themes. Contemporary international issues, such as trade and tade barriers, multinational companies, and distribution of resources such as oil and minerals; and the importance of cultural, religious and socio-economic differences, values, international relations, living and working in another country, the impact of poverty and economic differences.

POL 30600 The United States in the 1960's

Class:3 Lab:0 Credit:3

Not open to students with credit in HIST 306. A description and analysis of major domestic and foreign, social, political, military and diplomatic issues confronting the United States in the 1960's and approaches and efforts to resolve these issues. The class will utilize the 1960's as laboratory to provide students with both historical and political science skills and approaches to the issues and themes of a particular period. May be taken for history or political science credit.

Prereqs: HIST 15100 with min grade of D- OR HIST 15200 with min grade of D-

POL 30900 The Middle East

Class:3 Lab:0 Credit:3

Not open to students with credit in HIST 309. A survey beginning with the period of European involvement in the Ottoman Empire up to the present. The course includes the study of political Zionism and Arab nationalism, the role of the major powers between the two World Wars and that of the United States and the Soviet Union during the Cold War, and developments in the Middle East in the post-Cold War era.

Prereqs: HIST 10400 with min grade of D-

POL 31100 Congress and the President

Class:3 Lab:0 Credit:3

An analysis of policy formation which stresses the linkage between the , legal, behavioral, and normative approaches will be considered.

Prereqs: POL 10100 with min grade of D-

POL 31200 American Political Thought

Class:3 Lab:0 Credit:3

An analytical survey of the American contribution to Western political thought from the colonial period to the present day. The major themes and concepts of the American tradition are analyzed through study of the writings of representative thinkers, with special attention to the ideas which have affected the development of American political institutions.

Prereqs: POL 10100 with min grade of D-

POL 31400 The President and Policy Process

Class:3 Lab:0 Credit:3

A study of presidential leadership as the embodiment of social forces and as reflective of the personality of the incumbent; the president as national leader reflecting national myths and ideologies; the growth of the presidency; issues and forces affecting the continuity of presidential leadership; degree of institutionalization of the presidency.

Prereqs: POL 10100 with min grade of D-

POL 31500 Public Opinion and Elections

Class:3 Lab:0 Credit:3

Contemporary public opinion, political socialization, and voting behavior in America.

Prereqs: POL 10100 with min grade of D-

POL 32000 Introduction to Public Policy Analysis

Class:3 Lab:0 Credit:3

Examination of public policy analysis models and approaches and current public policy questions. The course will emphasize application of analytical methods to the examination of contemporary policy issues in the United States.

Prereqs: POL 10100 with min grade of D-

POL 33000 Politics of Lake County

Class:3 Lab:0 Credit:3

The study of Lake County politics focusing upon the selection of political leaders; the relation of the county to municipalities, townships, the state and federal government and public policy. Party officials and government office holders will be a resource for the course.

Prereqs: POL 10100 with min grade of D-

POL 33100 Politics and Religion

Class:3 Lab:0 Credit:3

Religion and Politics examines the relationship between religious faith and political life from philosophical, theological and behvioral perspectives. The class will focus in this course on perspectives from the intellectual heritage of the Western world. Therefore the work of thinkers, ancient and modern, will be examined. In addition empirical works on the consequences of religion beliefs on political behavior will also be reviewed. Topics will range from medieval scholastic philosophy to contemporary international relations. Religion will be viewed as one of the major driving forces of national and international politics in the 21st century.

POL 33300 Political Movements

Class:3 Lab:0 Credit:3

A study of political change ranging from legal reform to peaceful protest to violent revolution. Emphasis on ideologies and strategies of change relevant to consideration of contemporary political change.

Prereqs: POL 10100 with min grade of D-

POL 34300 Introduction to the Criminal Justice System

Class:3 Lab:0 Credit:3

Not open to students with credit in SOC 343. A study of the agencies and processes involved in the criminal justice system; legislatures, the courts, the police, the prosecutor, the public defender and corrections. An analysis of the roles and problems of each component with an emphasis on their interrelationships.

Prereqs: POL 10100 with min grade of D- AND SOC 10000 with min grade of D-

POL 34600 Law and Society

Class:3 Lab:0 Credit:3

Nature and development of law and legal institutions in historical, comparative, and contemporary prospectives; interrelationship of law, morality, and custom; legal change and social change; and the legal profession.

Prereqs: POL 10100 with min grade of D-

POL 34900 Intro to Jewish Studies

Class:3 Lab:0 Credit:3

An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts of Judaism, such as God, Torah, People, Land, and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture.

Prereqs: POL 10100 with min grade of D- OR HIST 10400 with min grade of D-

POL 35300 Current Political Ideologies

Class:3 Lab:0 Credit:3

Liberalism, conservatism, socialism, fascism, communism, and other political ideologies.

Prereqs: POL 10100 with min grade of D-

POL 35400 Civil Liberities and the Constitution

Class:3 Lab:0 Credit:3

A study of the politics of civil rights and liberties in the United States focusing upon the Constitution, legislation, court decisions, and executive implementation.

Prereqs: POL 10100 with min grade of D-

POL 35500 Computer Applications in Public Administration

Class:3 Lab:0 Credit:3

A problem solving introduction to microcomputer utilization in local, state, and federal government agencies. The course will address the role of computers in government decision -making. The history of the microcomputer's emergence in the public administration environment will be presented. In addition, the student will be introduced to customization of popular software packages to address specific problems.

Prereqs: POL 30000 with min grade of D-

POL 35600 Personnel Management in Government

Class:3 Lab:0 Credit:3

A study of the working of personnel management systems in local, state and federal agencies emphasizing recruitment, classification, compensation, and employee services.

Prereqs: POL 12000 with min grade of D-

POL 35700 Budgeting in the Public Sector

Class:3 Lab:0 Credit:3

Study of budgetary process in public agencies emphasizing the preparation and implementation of budgets by the public agencies. Political aspects of budgeting will be considered.
Prereqs: POL 12000 with min grade of D-

POL 35800 Administrative Law and Ethics

Class:3 Lab:0 Credit:3
Introduction to administrative law and ethics as they relate to the working of public agencies. Ethical codes developed by the professional organization of public administrators (e.g. ASPA) will be considered.
Prereqs: POL 12000 with min grade of D-

POL 35900 Administrative Behavior in Public Agenicies

Class:3 Lab:0 Credit:3
Study of organizational and interpersonal behavior in government agencies. Applications of behavioral theories in relation to organizational effectiveness will be emphasized.
Prereqs: POL 12000 with min grade of D-

POL 36400 Law, Ethics, and Public Policy

Class:3 Lab:0 Credit:3
This course is divided into three sections. Justice as liberty examines the notion or a right to privacy. Justice as equality focuses on economic rights. Finally, Justice as community addresses the notion of duties.
Prereqs: POL 10100 with min grade of D- OR HIST 10400 with min grade of D-

POL 37000 Introduction to Comparative State Politics

Class:3 Lab:0 Credit:3
Attributes: TransferIN
An introduction to the structure and process of state government, including the legal and political relationships between the state and local units of government.
Prereqs: POL 10100 with min grade of D-

POL 37100 Introduction to Comparative Urban Politics

Class:3 Lab:0 Credit:3
The politics of governing urban areas, including the selection of political leaders and citizen participation in the decision making of the central city. Special attention will be given to the integration of minorities into the political and social life of the city.
Prereqs: POL 10100 with min grade of D-

POL 37200 Indiana Government and Politics

Class:3 Lab:0 Credit:3
An examination of the political and governmental organization of the State of Indiana. Includes the political and historical development of Indiana state government and comparison of policies and institutions with those of other states.
Prereqs: POL 10100 with min grade of D-

POL 38000 The Politics of Bureaucracy

Class:3 Lab:0 Credit:3
An examination of bureaucratic organization in government. Organization theory and internal politics, foundations of bureaucratic power, and the relationship between bureaucracies and political culture, parties, pressure groups, and other structures of government.
Prereqs: POL 10100 with min grade of D-

POL 38800 The World of Ideas I

Class:3 Lab:0 Credit:3
Attributes: Engr Humanities Elective
Not open to students with credit in HIST 388 or PHIL 388. The first half of a two-semester chronological sequence based on reading and discussing source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and

Society.
Prereqs: POL 10100 with min grade of D- OR HIST 10400 with min grade of D-

POL 38900 The World of Ideas II

Class:3 Lab:0 Credit:3
Not open to students with credit in HIST 389 or PHIL 388. The second half of a two-semester chronological sequence based on reading and discussing primary source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society.
Prereqs: POL 10100 with min grade of D- OR HIST 10400 with min grade of D-

POL 39000 Topics in Political Science

Class:3 Lab:0 Credit:3
Attributes: Variable Title
May be repeated for credit. Must be Sophomore standing, have taken a 100-level political science class, or have the consent of instructor.
Prereqs: POL 10000 with min grade of D- OR POL 13000 with min grade of D-

POL 40000 Principles of Empirical Politcal Analysis

Class:3 Lab:0 Credit:3
An intermediate critical treatment of the scientific approach to the study of political behavior. Focus on the advantages and problems of analyzing political phenomena in terms of the following elements of scientific methodology: classification, measurement, generalization, verification, reliability, validity, casual inference and prediction. The importance of these elements for understanding politics will be illustrated by analyzing empirical studies drawn from various fields of political behavior.
Prereqs: POL 30000 with min grade of D-

POL 40100 Practicum in Local Government

Class:1 Lab:0 Credit:3
Observation and supervised participation on an official community committee or board, in a political campaign, or with professional governmental staffs. Readings and class meetings to integrate theory and experience. This course requires five hours per week of field experience.
Prereqs: POL 10100 with min grade of D-

POL 40300

Class:0 Lab:0 Credit:1-3
Prereqs: POL 10100 with min grade of D

POL 40400 Dilemmas of Democracy

Class:3 Lab:0 Credit:3
A study of the logical, empirical and normative dilemmas in theories of democratic governance with analysis of contemporary democratic systems.
Prereqs: POL 10100 with min grade of D-

POL 40500 Research Seminar in Public Administration and Policy

Class:3 Lab:0 Credit:3
Analysis of public administration policy. Student must be of senior standing in Political Science or have the consent of the instructor. A senior seminar to consider current research literature in public administration policy. Each class member will prepare a major research paper for public presentation.

POL 40600 Internship in a Public Agency

Class:3 Lab:0 Credit:3
This course requires a Senior standing in Political Science. Public agency work experience as an intern. Primarily designed for pre-service students interested in a public service career. The students will be supervised by the agency and an academic advisor. On-campus seminars for the interns will be organized.

POL 41000 Political Parties and Politics

Class:3 Lab:0 Credit:3

This course requires the student be preceded by Junior standing or above. An analysis of the nature and function of U.S. political parties in terms of social and economic forces that shape our political parties, pressure groups, and formal governmental structures are emphasized throughout. Special attention is devoted to political leadership, nominating processes, campaign management, voting behavior, and other important aspects of American politics.

POL 41100 Congress: Structure and Functioning

Class:3 Lab:0 Credit:3

It is a prerequisite you have a Junior standing or above for this course. A study of how Congress actually operates. Formal and informal power structures within both chambers and roles of the individual members of Congress are analyzed. Attention is directed to latent as well as manifest function of legislative, investigative, and other major activities of Congress. The problem of bringing expertise to bear on the legislative process is considered throughout.

POL 41400

Class:3 Lab:0 Credit:3

POL 42800 Politics of Regulation

Class:3 Lab:0 Credit:3

Politics and policies of federal and state regulatory agencies. Explanations of regulatory agency behavior, arguments for and against government regulation, and alternatives to government regulation.

Prereqs: POL 10100 with min grade of D-

POL 42900 Contemprorary Political Problems

Class:3 Lab:0 Credit:3

Attributes: Variable Title

May be repeated for credit with a different title. Contemporary political problems in the United States affecting the interpretation of democracy, human rights and welfare, social pressures, and intergovernmental relations.

POL 43300 International Organization

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Practicum

A study of the structure and functions of the United Nations and associated agencies with an emphasis on the role of this system in contemporary international relations.

Prereqs: POL 13000 with min grade of D-

POL 43500 International Law

Class:3 Lab:0 Credit:3

A study of international legal theories, principles, and practices with an emphasis on the role and utility of law in contemporary international relations.

Prereqs: POL 13000 with min grade of D-

POL 43900 United States Foreign Policy Making

Class:3 Lab:0 Credit:3

An analysis of the decision-making process in United States foreign policy.

Prereqs: POL 13000 with min grade of D-

POL 44200 Government and Politics in Russia

Class:3 Lab:0 Credit:3

Analysis of Russian political culture and the Russian political tradition. History, organization, and functioning of the governmental apparatus. The role of the social organizations, interest groups, and elites. Models of the Russian political system.

Prereqs: POL 14100 with min grade of D-

POL 44300 Field Experience in Criminal Justice.

Class:1 Lab:0 Credit:3

Attributes: Malpractice-Criminal Justice

Requires consent of instructor. May be repeated once for credit as either POL 443 or SOC 443. Observation and supervised participation in the criminal justice system. Readings and class meetings to integrate theory and experience. Intended for students who plan to become employed in the criminal justice system upon receiving the bachelor's degree.

POL 45400 Selected Problems in Materialist Political Thought

Class:3 Lab:0 Credit:3

May be repeated for credit. Discussion and analysis of representative works and major schools of political theory which take a materialistic or naturalistic approach to the description and evaluation of political phenomena, e.g. the thoughts of Hobbes, or of Marx, or psychoanalytic theories of politics. Emphasizes textural analysis and logical structure of the works examined and considers their applicability to contemporary political life.

Prereqs: POL 10100 with min grade of D-

POL 46000 Judicial Politics

Class:3 Lab:0 Credit:3

A survey of judicial processes as they operate in America. Both trial courts and appellate courts will be examined in light of the procedures with which they operate. The external social, economic, and political pressures surrounding courts, and the impact courts have on society will be considered.

Prereqs: POL 10100 with min grade of D-

POL 46100 Constitutional Law

Class:3 Lab:0 Credit:3

A survey of selected areas of constitutional law, considering the political and social influences as well as the doctrinal forces which have produced these policies and interpretations.

Prereqs: POL 10100 with min grade of D-

POL 49000 Topics In Political Science

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Sophomore standing required. May be repeated for credit.

Prereqs: POL 10100 with min grade of D-

POL 49100 Political Science Senior Seminar.

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Prerequisite: Senior major in Political Science or consent of instructor. This is a variable title seminar focusing on contemporary issues on political science at the senior level. It is part of the "capstone" experience for seniors in the major.

POL 49300

Class:0-3 Lab:0 Credit:1-3

Attributes: Variable Title

Prereqs: POL 10100 with min grade of D

POL 49800

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Prereqs: POL 10100 with min grade of D

POL 50100

Class:3 Lab:0 Credit:3

POL 52300 Environmental Politics and Public Policy.

Class:3 Lab:0 Credit:3

An examination of the political problems of natural resource use and environmental problems in the United States. Particular consideration is given to the importance of resources for American society, to control the environment by the government, and to the legal aspects of public policy.

POL 59000 Directed Reading in Political Science.

Class:1-3 Lab:0-3 Credit:1-3
Attributes: Variable Title
May be repeated for credit. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls. Approval of each reading project must be secured from the department.

POL 68100

Class:3 Lab:0 Credit:3

PSY 12000 Elementary Psychology

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Wellness Education, Gen Ed-Social/Behavioral, Gen Ed-Wellness, General Education, TransferIN
Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, attention, perception, learning, memory, and thinking.

PSY 20300 Introduction To Research Methods In Psychology

Class:2 Lab:2 Credit:3
Attributes: Experiential Learning, ExL-Design Projects, ExL-Undergraduate Research
The use of scientific methods in psychology. Lecturing covers principles of collecting and interpreting data, using examples of research from many areas of psychology. In the laboratory portion the student uses many different techniques from various areas of psychology.
Prereqs: (BHS 20100 with min grade of C- OR PSY 50000 with min grade of C- OR STAT 30100 with min grade of C-) AND MA 15300 with min grade of C-

PSY 20500 Testing And Measurement

Class:2 Lab:2 Credit:3
Not open to students with credit in PSY 505. Fundamental concepts of test theory, introduction to applied psychological testing, the scale of data, and the interpretation of test results.
Prereqs: (BHS 20100 with min grade of C-) OR PSY 50000 with min grade of C- AND MA 15300 with min grade of C-

PSY 21000 Introduction To Human Development

Class:3 Lab:0 Credit:3
An introduction to the development of individuals from conception through adulthood and aging. Physical growth, social and emotional behavior, cognitive and language development are covered.

PSY 30900 Educational and Psychological Assessment

Class:3 Lab: Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
Undergraduate Experiential Research Seminar. Theoretical foundations and applied experiential research opportunity. Requires presentation to key stakeholders and 45 hours of individual or group experiential research during the semester.

PSY 31000 Sensory And Perceptual Processes

Class:3 Lab:0 Credit:3
Theory, problems, and research in sensation and perception, including physiological bases and measurement techniques.
Prereqs: PSY 20300 with min grade of C- AND PSY 20500 with min grade of C-

PSY 31100 Human Learning And Memory

Class:3 Lab:0 Credit:3
Theory and research in verbal learning, attention, discrimination learning, thinking, conceptual and organization processes, memory, and languages.
Prereqs: PSY 20300 with min grade of C- AND PSY 20500 with min grade of C-

PSY 31400 Introduction To Learning

Class:3 Lab:0 Credit:3

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning examined and the implications of these theories, and the learning approach generally, for a variety of practical problems are emphasized.
Prereqs: PSY 20300 with min grade of C- AND PSY 20500 with min grade of C-

PSY 32200 Neuroscience of Motivated Behavior

Class:3 Lab:0 Credit:3
Neuroanatomical analyses of behavioral functions. Topics include: movement; sexual behavior, maternal behavior; hunger, thirst; emotion; pain; addiction; biological rhythms; memory; evolution of the brain; language; hemispheric specialization; brain damage; brain remodeling during development and aging; correlates of cognitive processing.
Prereqs: PSY 20300 with min grade of C- AND PSY 20500 with min grade of C-

PSY 33900 Advanced Social Psychology

Class:3 Lab:0 Credit:3
An in-depth survey of selected topics in social psychology such as aggression, attraction, social influence, social attribution, helping behavior, leadership, cooperation, competition, and attitudes and attitude change.(Not open to students with credit in SOC 340.)
Prereqs: PSY 12000 with min grade of D- AND PSY 20300 with min grade of D- OR SOC 38300 with min grade of D-

PSY 34400 Human Sexuality

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Wellness Education, Gen Ed-Social/Behavioral, General Education, TransferIN
A nonjudgmental approach to the study of sexuality through attempts to bring to students' awareness their own sexual values. Topics include evaluation of research, biological aspects, varieties of expression, inadequacies, violence, love, erotica, gender identity, aging, and sex laws. (Not open to students with credit in WOST 344)
Prereqs: PSY 12000 with min grade of D- OR SOC 10000 with min grade of D-

PSY 34900 Psychology Of Women

Class:3 Lab:0 Credit:3
An examination of the history and sources of concepts which have defined the psychological functioning of women and a critical evaluation of current evidence regarding women and their behavior, examining the influences which affect them in contemporary society, as set within the context of the life cycle. (Not open to students with credit in WOST 349.)
Prereqs: PSY 12000 with min grade of D-

PSY 35000 Abnormal Psychology

Class:3 Lab:0 Credit:3
Attributes: TransferIN
Prerequisite of three hours of psychology completed. Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.
Prereqs: PSY 12000 with min grade of D-

PSY 35500 Child Abuse And Neglect

Class:3 Lab:0 Credit:3
A historical and conceptual overview of violence against children, from infancy through adolescence, is presented. Definitions and models of violence are evaluated with respect to existing research findings. Assessment techniques, treatment (intervention) approaches and legal issues are examined. The major forms of violence against children to be emphasized include: physical child abuse, sexual chold abuse, emotional (psychological) child abuse, child neglect and failure-to-thrive infants.
Prereqs: PSY 12000 with min grade of D-

PSY 36100 Human Development I: Infancy and Childhood

Class:3 Lab:0 Credit:3
A consideration of the formative years in human development with primary attention given to the processes of socialization, individualization, and adaptation, initiated by retrospective self-examination and furthered by an analysis

of systematic life history data.
Prereqs: PSY 12000 with min grade of D-

PSY 36200 Human Development II: Adolescence

Class:3 Lab:0 Credit:3
A behavioristically-oriented analysis of social, personality, and cognitive development in adolescence and youth.
Prereqs: PSY 36100 with min grade of D- OR EDPS 22000 with min grade of D-

PSY 36300 Human Development III: Adulthood

Class:3 Lab:0 Credit:3
An analysis of growth trends in adulthood as arising from the experiences of childhood and adolescence and as manifesting themselves in the performance of a variety of adult roles. The realization of maturity, as seen in self assessment and examination of systematic life history data. The prospects for later adulthood: involvement versus disengagement.
Prereqs: PSY 36200 with min grade of D-

PSY 37000 Environmental Psychology

Class:3 Lab:0 Credit:3
The psychological influence of immediate environment on human, and, to a lesser extent, animal behavior. Environmental factors will be considered from the viewpoints of social psychology, applied experimental psychology, consumer psychology, community psychology, and ethology.

PSY 37300 Psychology In Industry

Class:3 Lab:0 Credit:3
Survey of applications of psychological principles and research methods to personnel selection, training, and appraisal; societal context of work including study of work motivation, satisfaction and alienation, small group dynamics, and leadership. (Not open to students with credit in PSY 570.)
Prereqs: PSY 12000 with min grade of D-

PSY 37400 Organization And Behavior

Class:3 Lab:0 Credit:3
Not open to students with credit for PSY 572. Survey of basic behavioral science research and thought on organizational behavior as evidenced in individual group, intergroup, and societal phenomena. The reciprocal relationship between individual work behavior and institutional factors are stressed and analytically reviewed.
Prereqs: PSY 12000 with min grade of D-

PSY 38600 Consumer Behavior

Class:3 Lab:0 Credit:3
Basic concepts and methods of psychology as used to understand consumer behavior. Course covers general concepts (e.g. personality, information-processing, social class, family decision-making) as well as their applications to specific examples of consumer behavior (e.g. information search, product choice, purchase).
Prereqs: PSY 12000 with min grade of D-

PSY 42000 Introduction To Personality Theory

Class:3 Lab:0 Credit:3
Prerequisite a prior three credit hour psychology course. Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists surveyed included Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Boss, Binswanger, and Kelly. Skinnner, Bandura, Rogers, Boss, Binswanger, and Kelly.
Prereqs: PSY 12000 with min grade of D-

PSY 42800 Drugs And Behavior

Class:3 Lab:0 Credit:3
Prerequisite of six credits of psychology. Discussion on the variety of drugs which affect the nervous system and behavior. Emphasis will be upon a discussion of the physiological and pharmacological bases for the use and misuse of drugs in our society.

PSY 43000 Systems And Theories Of Psychology

Class:3 Lab:0 Credit:3

A review of major systems of thought and theories contributing to current developments in psychology. Special emphasis placed on broad approaches to building an understanding of man, both scientific and humanistic including behaviorism, psychoanalysis and humanistic-cognitive approaches.

Prereqs: PSY 31000 with min grade of C- AND PSY 31400 with min grade of C- OR PSY 32200 with min grade of C-

PSY 43300 Theories of Human Development

Class:3 Lab:0 Credit:3

Six credit hours of psychology required. (Not open to students with credit in PSY 343.) A survey of current major issues of developmental psychology and relevant and evolving methodological approaches to these problems. The emphasis is on developmental processes and factors affecting these processes.

Prereqs: PSY 12000 with min grade of D- AND BHS 20500 with min grade of D- AND PSY 36100 with min grade of D- OR CDFS 21000 with min grade of D-

PSY 43500 Introduction to Marriage and Family Therapy

Class:3 Lab:0 Credit:3

This course provides the student with an introduction of general systems theory with a special emphasis on applications within marriage and family therapy. Course topics include the historical roots of family therapy. descriptions of treatment modalities and clinical interventions used by marriage and family therapists. A variety of theoretical approaches to marriage and family therapy are explored.

Prereqs: PSY 12000 with min grade of D-

PSY 44300 Aggression And Violence

Class:3 Lab:0 Credit:3

This course requires the consent of the instructor. An intensive examination of the nature of human aggression. Among the topics covered will be: (1)theoretical perspectives concerning such behavior; (2) social conditions that encourage its performance; and (3) means for its prevention and control.

PSY 48000 Field Experience In Psychology

Class:1 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Internship, Malpractice-Criminal Justice

Prerequisite the consent of the instructor and with consen may be repeated once for credit.) Supervised volunteer field work experiences in a setting appropriate to students' interest and goals. Intended as an opportunity to integrate theory and practice.

PSY 48600 Seminar in Human Development and Disability

Class:2 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Practicum

The will expose students multiple perspectives related to the issuse in human development and disability related issues. The purpose of the cours is to provide an interdisciplinary experience for students preparing for work in human services specifically with individuals with disability. Students will participate in a seminar originating at the Riley Child Development Center at the Indiana University School of Medicine. Students will participate in seminar presentations provided by pediatricians, psychologists, psychiatrists, social workers, special educators and occupational therapists. Students will also gain experience in critiquing disability related research in the context of guided class discussion.

PSY 49100 Topics In Psychology

Class:1-6 Lab:0 Credit:1-6

Attributes: Variable Title

Variable titles.

PSY 49800 Senior Research

Class:3 Lab:0 Credit:3

Attributes: Variable Title

Senior standing and psychology major Student conducts and writes a report on an individual research project under the guidance of a faculty member.

PSY 50000 Statistical Methods Applied To Psychology, Education And

Class:3 Lab:0 Credit:3

Sociology (Not open to students with credit in BHS 201) Descriptive statistics and an introduction to sampling statistics. Applied to psychological, sociological, and educational data.

PSY 50500 Mental Measurement

Class:2-3 Lab:2 Credit:3

A prerequisite of six hours of psychology including PSY 500 or equivalent. Introduction to the general area of mental measurement. Theory and content of measuring devices in the field of intelligence, interests, personality, and special aptitudes.

PSY 53200 Psychological Disorders Of Childhood

Class:3 Lab:0 Credit:3

A prerequisite of six credit hours of psychology. A review of the nature, causes and consequences of deviations from normal childhood development. Emphasis is placed on the two most common types of psychological problems in childhood: mental retardation and behavior disorders.

PSY 53500 Psychology Of Death And Dying

Class:3 Lab:0 Credit:3

An examination of psychological research and theory related to death and the dying process. Topics include:(1) death concepts, attitudes and fears-historical and contemporary, 2) definitions and predictors of death (physical, psycho-social predictors of death), effects of death on survivors, psycho-social factors related to individual differences and normative dying behavior, stages of dying, effects of pain and drugs, managing the dying process.

PSY 55000 Introduction To Clinical Psychology

Class:3 Lab:0 Credit:3

The case-study method, including a discussion of the importance of historical information, the contribution of clinical tests to diagnosis, and a general survey of prevention and treatment techniques.

PSY 57000 Industrial Psychology

Class:3 Lab:0 Credit:3

Not open to students with credit in PSY 373. Survey of the applications of psychological principles and of research methodology to the various human problems in industry, such as personnel selection and appraisal, the organizational and social context of human work, the job and work situation, human errors and accidents, and psychological aspects of consumer behavior.

PSY 57200

Class:3 Lab:0 Credit:3

PSY 57700

Class:3 Lab:0 Credit:3

PSY 58500

Class:3 Lab:0 Credit:3

PSY 59000 Individual Research Problem

Class:0-3 Lab:0-7 Credit:1-3

Attributes: Variable Title

consent of the instructor. Opportunity for students to study particular problems in any field of psychology or initiate themselves into research techniques under the guidance of a member of the staff.

PSY 60000 Statistical Inference

Class:3 Lab:0 Credit:3

Emphasis is given to principles underlying both parametric and nonparametric inference.

Prereqs: PSY 50000 with min grade of B-

PSY 60500 Applied Multivariate Analysis

Class:3 Lab:0 Credit:3

A survey of the most frequently employed multivariate research techniques, such as multivariate generalizations of univariate tests and analysis of variance, principal components, canical analysis, and discriminant analysis. A central theme of the course is the general linear model, both univariate and multivariate. A multipurpose program for this model provides the student with practical experience in conducting multivariate research.

PSY 67300 Behavioral Disorders

Class:3 Lab:0 Credit:3

Advanced abnormal psychology. Consideration will be given to research and theory of psychopathology.

PTGS 10100 Portuguese Level I

Class:3 Lab:1 Credit:3

This course stands for an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

PTGS 10200 Portuguese 102. Level II

Class:3 Lab:1 Credit:3

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community

Prereqs: PTGS 10100 with min grade of D-

PUC 10100

Class:0 Lab:0 Credit:0

PUC 10101

Class:0 Lab: Credit:0

REG 99200

Class:0 Lab:0 Credit:0

Attributes: Variable Title

RUSS 10100 Russian Level I

Class:4 Lab:0 Credit:4

Introduction to basic skills in the languages.

RUSS 10200 Russian Level II

Class:4 Lab:0 Credit:4

Continuation of Russian 101. Prerequisite: Russian 101

Prereqs: RUSS 10100 with min grade of D-

SCI 10300 Survey of the Biological World

Class:2 Lab:2 Credit:3

Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN

This laboratory science course is designed for non-biology majors to satisfy the general education science requirement. Topics in this course include history of planet earth, evolution and natural history of living organisms. This course cannot be use for biology elective credits by biology majors.

SCI 10400 Introduction to Environmental Biology

Class:2 Lab:2 Credit:3

Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science

A survey of human impacts on natural environments. This course assumes very little prior knowledge in ecology, and thus serves for non-biology major students who wish to satisfy their lab science requirements. Topics include basic concepts of ecology, interactions between human and natural environment, human wellness in relation to environmental pollution, natural resource conservation and management, modern environment technology, and current environmental issues in our society. Lecture material is reinforced and expanded upon in laboratory exercises and field trips in ecology, environmental health, pollution and resource conservation. This course will not count toward a biology degree.

SCI 10500 Invitation to Human Biology

Class:2 Lab:2 Credit:3

Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science, TransferIN
This course assumes very little prior specific knowledge of biology, and thus serves for non- biology students who wish to satisfy their lab science requirements. Topics include basic structure and function of the structure of the human body, human genetics, human wellness issues, human evolution, and human impact on the environment. Lecture material is reinforces and expanded upon in laboratory exercises. This course will not count toward a biology degree.

SCI 10601 Food Chemistry

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
This course introduces fundamental chemistry concepts and then covers the basic properties of water, protein, carbohydrates, lipids, minerals and vitamins and their roles in food systems. Additionally the course covers enzymes in food and food additives.

SCI 11200 Introducton To The Physical Sciences I

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
An introduction to science and the scientific method as evidenced by the physical and chemical aspects of nature. Physical and chemical concepts and processes will be studied in the context of everyday life. General topics will include: motion, energy, heat, electromagnetism, atoms and molecules.

SCI 11300 Introduction To The Physical Sciences II

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
An introduction to science and the scientific method as evidenced by the physical and geological aspects of nature. General topics will include: Planetary geology, chemical concepts of matter including classification, chemical reactions, bonding and energy.

SCI 11400 Introduction to Life Science

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
An introduction to life science for non-biology majors. This inquiry-based course will take an investigative approach to various topics in biology that are related to everyday life. Topics include evolution and life history of animals and plants, cells, human health, biotechnology and ecology. Although offered primarily for elementary education majors, this course is open to all qualified students. This course cannot be counted as a biology elective credits for a biology degree.

SCI 12200 Origin Of The Universe

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Scientific, General Education, Lab Science
Fundamental concepts of the evolution of the universe from a scientific viewpoint will be studied. Using basic mathematics skills, Big Bang Theory, Black Holes, Particle Accelerators, and the essential principles of physics will be investigated.

SCI 13100 Science and Environmental Issues

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
An introduction to the application of chemical principles to the world around us (our environment). Ot may be used to satisfy the general education laboratory science requirement and serve as an introductory course for further study in the field of environmental science.

SCI 14000 Introduction to Forensic Science

Class:2 Lab:2 Credit:3
Attributes: Lab Science
Introduction to the theories and practices of scientific techniques as applies to crime detection. Some focus areas will include crime scene processing, physical evidence, the examination and evaluation of evidence, and laboratory procedure.

SCI 15000 Brewing Science

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
Following the brewing process from 'grain-to-glass' this course uses the biological and chemical principles of brewing to teach science to the non-science major. While based solely on malted barley, water, hops and yeast, beer and the brewing process provide a wealth of examples of basic science. In addition to these basic ingredients, scientific discussions on malting, mashing, fermentation and the making of different beer styles will also be included. In the laboratory, students will gain hands-on experience with important aspects of the brewing process. An emphasis on the responsibility we must take for our behavior when consuming beer will be stressed. Students must be 21 years of age before the start of the semester.

SCI 19000 Special Topics in Science

Class:0-3 Lab:0-2 Credit:3
Attributes: Variable Title
A special topics course in physical science for non-science majors. Prerequisite: High School Algebra, MA 041 or equivalent.
Prereqs: MA 11500 with min grade of D-

SCI 20200 Environmental Science

Class:2 Lab:2 Credit:3
Attributes: Gen Ed-Natural Science, Gen Ed-Scientific, General Education, Lab Science
In this course, students are expected to understand the processes of scientific methods for testing hypotheses about the natural world, able to apply mathematical skills to quantitative and analytical problem solving in environmental issues, and gain basic knowledge in science of human population dynamics, natural resouces, renewable and nonrenewable energy and environmental pollution.

SCI 22000 health & Safety

Class:2 Lab:0 Credit:2
Attributes: Gen Ed-Wellness Education, Gen Ed-Wellness, General Education
Prerequisite: CHM 116 or equivalent A course on laboratory safety, health related issues and laboratory stockroom management in the physical sciences for science education majors.
Prereqs: CHM 11600 with min grade of D-

SCI 29000 Special Topics in Science

Class:0-3 Lab:0-6 Credit:3
Attributes: Variable Title
Introductory, integrated science course for engineering and science students. Beginning lectures will cover the basic chemistry of life, the organization of cells. This will be followed by more advanced topics such as photosynthesis. Each topic will emphasize how understanding the biological system requires concepts and tools from other disciplines such as chemistry and physics.

SCI 31500 Environmental Science for Elementary Education

Class:2 Lab:2 Credit:3
This project-based course integrates knowledge and skills in physical and biological sciences to develop workable scientific solutions for environmental-related problems in everyday life. Topics may include, but are not limited to, pollution and control, natural resource conservation and managment, human health and wellness. Although offered primarily for elementary education majors, this course is open to all qualified students. This course cannot be counted as biology elective credits for a biology degree.
Prereqs: SCI 11200 with min grade of D- OR SCI 11300 with min grade of D- AND SCI 11400 with min grade of D-

SCI 32400 Physical Science & Society

Class:3 Lab: Credit:3
One year of organic chemistry and one year of college physics required. This course focuses on the chemicals, chemical and physical principles and phenomena of environmental consequence. Societal issues are incorporated largely in historical relevance. topics include ozone depletion, greenhouse effect, air pollution, water pollution, acid rain, toxics, energy flow, and environmental technology.

SCI 49100 Environmental Science Internship

Class:1-3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship
Directed in-service training in government agencies or programs, industry, community organizations, or private- public joint organizations on environment subjects.
Prereqs: NRES 20200 with min grade of D-

SERV 10100 Service Learning/Civic Engagement - Level I

Class:1 Lab:0 Credit:1
Attributes: Experiential Learning, ExL-Service Learning
Experience at the entry level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of five hours per week (75 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 10200 Service Learning/Civic Engagement - Level II

Class:2 Lab:0 Credit:2
Attributes: Experiential Learning, ExL-Service Learning
Experience at the intermediate level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of ten hours per week (150 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 10300 Service Learning/Civic Engagement - Level III

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Service Learning
Experience at the advanced level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 15 hours per week (225 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 20100 Service Learning/Civic Engagement II

Class:2 Lab:0 Credit:2
Attributes: Experiential Learning, ExL-Service Learning
Experience at the mid-level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 10 hours per week (150 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.
Prereqs: SERV 10100 with min grade of D- OR SERV 10200 with min grade of D- OR SERV 10300 with min grade of D-

SERV 30100 Service Learning/Civic Engagement III

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Service Learning
Experience at the advanced level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 15 hours per week (225 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between teh student, the University and the Community.
Prereqs: SERV 20100 with min grade of D-

SERV 40100 Service Learning/Civic Learning IV

Class:4 Lab:0 Credit:4
Attributes: Experiential Learning, ExL-Service Learning
Experience at the mastery level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 20 hours per week (300 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific

learning objectives. Emphasis on collaboration between the student, the University and the Community.
Prereqs: SERV 30100 with min grade of D-

SOC 10000 Introduction To Sociology

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Social Sciences, Gen Ed-Social/Behavioral, General Education, TransferIN
A survey course designed to introduce the student to the science of human society. Fundamental concepts, description, and analysis of society, culture, the socialization process, social institutions, and social change. A first course for sociology majors and a possible terminal course for non-majors.

SOC 22000 Social Problems

Class:3 Lab:0 Credit:3
Attributes: TransferIN
Contemporary problems at the community, society, and international levels, focusing on patterns of social organization and social change in American society, with concentration on such topics as technological militarism and war, poverty, racism, political protest, and cybernation.
Prereqs: SOC 10000 with min grade of D-

SOC 24500 Field of Sociology

Class:1 Lab:0 Credit:1
Examination of educational and career opportunitites in the field of Sociology. Major theoretical and research approaches are briefly presented to assist student preparation for subsequent courses and options in Sociology. The application process and experience of post-graduate education are reviewed.
Prereqs: SOC 10000 with min grade of D-

SOC 26100 Basic Helping Skills for Human Services

Class:3 Lab:0 Credit:3
Attributes: TransferIN
Not open to students with credit in SWRK261. Provides a basic overview of the profession of social work: its development as a profession, professional values and ethics, and the multiple settings in which social work is practiced. Instruction is given in the types of social work; i.e., the generic complex which results in individual casework, group work, community practice, administration, and policy. Methods of social work are described, along with the current frameworks for social work practice, including systems and problem solving.
Prereqs: SOC 10000 with min grade of D-

SOC 30100 Sociology of International Change

Class:3 Lab:0 Credit:3
Analysis of recent international developments from the sociological perspective. Topics include such issues as ethnic conflicts, trade wars, population growth, technological changes, environmental issues, famine, the collapse of the USSR, and the formation of new political/ economic rivalries.
Prereqs: SOC 10000 with min grade of D-

SOC 30600 Methods In Human Services

Class:3 Lab:0 Credit:3
The class will focus on case mangement techniques that will be used in format systems such as welfare programs, health care and mental health agencies, child care programs, agencies serving the elderly and the corrections industry. Emphasis will be placed on multidimensional assessment techniques, information and referral services and the skills necessary to act as a change agent, educator and facilitator. Other essential elements of the course include crisis intervention, the dynamics involved in family systems, health promotion, and the needs of special populations.
Prereqs: SOC 10000 with min grade of D-

SOC 30700 Field Experience In Human Services

Class:2 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship, Malpractice-Criminal Justice
The field experience component of the Human Services curriculum provides a supervised learning experience in a professional practice setting. The participants in the field practicum include the student, faculty and agency supervisor.

This will give students the opportunity to integrate carefully selected and approved individualized experiences as they actively engage in professional tasks which complement and reinforce classroom learning. The seminar that accompanies the course will provide opportunities for student peer relationships and for the development of beginning competencies as students learn to use supervision and focus on specific practice areas. The course will place particular emphasis on the needs of each student.
Prereqs: SOC 26100 with min grade of D-

SOC 31400 Race And Ethnic Relations

Class:3 Lab:0 Credit:3
Not open to students with credit in SOC 514. An examination of the social, psychological, political, economic, and cultural factors that influence society's treatment of members of various racial and ethnic groups, and those factors that influence the ways those factors that influence the ways those groups interact with each other.
Prereqs: SOC 10000 with min grade of D-

SOC 31800 Sociology of Sport

Class:3 Lab:0 Credit:3
This course provides a sociological understanding of the institution of sports. It particularly investigates the role of politics, the economy, and the media in the creation of sports as an institution. The variables of race, class and gender are emphasized, as are the links between sports and basic American values.

SOC 32000 General Social Organization

Class:3 Lab:0 Credit:3
The study of selected areas of social organization. Institutions as special forms of organizations and bureaucracies. Theories and empirical studies of power and decision making in organizations. Case studies of American organizations and institutions.
Prereqs: SOC 10000 with min grade of D-

SOC 32500 Social Forces And Social Movements

Class:3 Lab:0 Credit:3
Examines the social, political, economic, and social psychological conditions that give rise to social movements, the ideological perspectives of major social movements, and the inter-relationships between social movement and social change.
Prereqs: SOC 10000 with min grade of D-

SOC 33000 Culture, Arts, Society

Class:3 Lab:0 Credit:3
The relations of the arts to society; the production, diffusion, institutionalization, democratization of the arts, with attention to the consequences of diverse media structures organization, marketing, and support structures. Emphasis will be placed on related emerging social roles, the connection between art and politics, elite versus mass arts, and the arts and cultural values.
Prereqs: SOC 10000 with min grade of D-

SOC 33400 Urban Sociology

Class:3 Lab:0 Credit:3
Development of the city and its functions: types of social behavior in cities; influences of city life on personality; city planning.
Prereqs: SOC 10000 with min grade of D-

SOC 34000 General Social Psychology

Class:3 Lab:0 Credit:3
Attributes: TransferIN
Not open to students with credit in PSY 339. Social influences on the individual and processes of social interaction. Individual attitudes and behavior as related to socialization, social norms, social roles, communication and propaganda, and other social influences. Among the interaction processes considered are interpersonal attraction, influence, leadership, cooperation, and conflict.
Prereqs: SOC 10000 with min grade of D- OR PSY 12000 with min grade of D- AND SOC 38300 with min grade of D- OR

PSY 20300 with min grade of D-

SOC 34100

Class:3 Lab:0 Credit:3

SOC 34300 Introduction To The Criminal Justice System

Class:3 Lab:0 Credit:3
Attributes: TransferIN
Not open to students with credit in POL 343. A study of the agencies and processes involved in the criminal justice system: legislature, the courts, the police, the prosecutor, the public defender, and corrections. An analysis of the roles and problems of each component with an emphasis on their inter-relationship.
Prereqs: POL 10100 with min grade of D- AND SOC 10000 with min grade of D-

SOC 35000 Social Psychology Of Marriage

Class:3 Lab:0 Credit:3
Not open to students who have had CDFS 350 or WOST 350 Designed to provide an understanding of contemporary courtship, marriage, and family interactions cultural, social, and social-psychological phenomena. Consideration of the major sources of martial strain, and conflict within a heterogeneous, rapidly changing society.
Prereqs: SOC 10000 with min grade of D-

SOC 36100 The Institution of Social Welfare

Class:3 Lab:0 Credit:3
Not open to students with credit in SWRK 361. Basic concepts and activities of social service organizations. Field trips to selected institutions.
Prereqs: SOC 10000 with min grade of D-

SOC 36400 Child And Family Welfare

Class:3 Lab:0 Credit:3
Not open to students with credit in SWRK 364. A review of the family as it is influenced by societal and personal forces. The impact of culture, society, and economics on the family is reviewed; additionally, the personal and interpersonal factors including family crises, breakdowns, unemployment, and alcoholism are considered.
Prereqs: SOC 26100 with min grade of D- AND PSY 36100 with min grade of D- AND PSY 36200 with min grade of D-

SOC 36700 Religion in America

Class:3 Lab:0 Credit:3
Examines the social dimensions of religion in American life; religion in American culture, social profiles of America's religious groups, trends in individual religious commitment; and religion's impact on American life.
Prereqs: SOC 10000 with min grade of D-

SOC 38200 Introduction to Statistics in Sociology

Class:3 Lab:0 Credit:3
Introduction to the basic techniques of statistical analysis applicable to sociological data. Elementary descriptive statistics and statistical inference. Introduction to multivariate analysis.
Prereqs: SOC 10000 with min grade of D-

SOC 38300 Introduction To Methods Of Social Research II

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Undergraduate Research
Introduction to the methods of data collection and to the use of the scientific method in social research. Formulation of hypotheses and research designs for their testing. Elementary principles for the conduct of experiments, observation, and interviewing, documentation; content analysis; and surveys. Relationship between social research and social theory.
Prereqs: BHS 20100 with min grade of D-

SOC 40200 Principles Of Sociology

Class:3 Lab:0 Credit:3
12 hours of Sociology and 2.25 GPA in all Sociology courses. An advanced critical treatment of the theories, concepts, undergraduate majors in sociology.

Prereqs: SOC 10000 with min grade of D-

SOC 41100 Social Stratification

Class:3 Lab:0 Credit:3

Examination of systems of class and caste, with special attention to the United States; status, occupation, income, and other elements in stratification.

Prereqs: SOC 10000 with min grade of D-

SOC 41200 Social Change

Class:3 Lab:0 Credit:3

The study of social change in premodern and modern societies. The following topics will be included: theories of social change, current patterns of social change in the developing and industrial worlds, changes in socialization patterns, interpersonal relations, social institutions, the impact of social change, the desirability of growth and development and the dilemmas of modernization.

Prereqs: SOC 10000 with min grade of D-

SOC 41600 Industrial Sociology

Class:3 Lab:0 Credit:3

Provides an overview of the historical development of industrial organizations from craft production through the factory to multinational corporations. Examines changes in managerial practices and ideologies and workers' reactions. Explores other institutions (including government, schools, mass media) affecting industrial development.

Prereqs: SOC 10000 with min grade of D-

SOC 42100 Juvenile Delinquency

Class:3 Lab:0 Credit:3

A study of social and psychological factors influencing individual delinquent behavior patterns. Emphasis on preventive and rehabilitative programs and the role of community agencies, such as social service agencies, juvenile courts, youth authorities. Visits to selected organizations and institutions.

Prereqs: SOC 10000 with min grade of D-

SOC 42200 Criminology

Class:3 Lab:0 Credit:3

Nature and cause of crime; methods of dealing with adult and juvenile offenders; consideration of present programs for the social treatment of crime in the light of needed changes.

Prereqs: SOC 10000 with min grade of D-

SOC 43000 Sociology Of Aging

Class:3 Lab:0 Credit:3

Examination of the theories of aging, problems confronting older persons, and programs designed to assist the elderly. Consideration of social aspects of aging in the U.S. in the areas of retirement, employment, housing, income, health care, and the family relationships with cross-cultural and a historical comparisons.

Prereqs: SOC 10000 with min grade of D-

SOC 43100 Services for the Aged

Class:3 Lab:0 Credit:3

This course describes current and alternative models for providing community and institutional-based services for the aged. Intervention theories and strategies for providing human services are discussed. Students are expected to apply course concepts when developing ideas for and evaluating existing services for older people.

Prereqs: SOC 43000 with min grade of D- OR PSY 36300 with min grade of D-

SOC 44000 Sociology Of Health And Illness

Class:3 Lab:0 Credit:3

Examination of the social aspects of health beliefs, the definition of disease, and decisions regarding the seeking of medical care. Identification of major changes in patterns and frequencies of health, sickness, disease, and death in the 20th century and factors influencing these patterns. Analysis of characteristics of U.S. medical care systems with particular emphasis on the economics and ethics of health care delivery, the production and distribution of medical personnel, and comparisons with other systems.

Prereqs: SOC 10000 with min grade of D-

SOC 44300 Field Experience in Criminal Justice

Class:2 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship, Malpractice-Criminal Justice
GPA of 2.25 or higher; 9 credit hours in Criminal Justice. Observation and supervised participation in the criminal justice system. Readings and class meetings to integrate theory and experience. Intended for students who plan to become employed in the criminal justice system upon receiving the bachelor's degree.

SOC 45000 Gender Roles In Modern Society

Class:3 Lab:0 Credit:3
This course is not open to students with credit in WOST450. A critical examination of the roles of men and women in many societies with particular attention to sex/gender differences and inequalities in the contemporary United States. Origins, goals and tactics of the recent women's and men's liberation movements. Sex differences and inequality in the area of sexuality, marriage, family, education, employment, and income. Social factors which maintain and those which may minimize sex and inequality. Perequisite:6 credit hours of Sociology.
Prereqs: SOC 10000 with min grade of D-

SOC 45300 Intimate Violence

Class:3 Lab:0 Credit:3
This course examines violence between intimates accross the life span starting with child abuse and ending with abuse against the elderly. The perspectives used include social learning theory, gender role socialization and sociocultural values. Current research as well as emerging themes about the transmission of violence, learned behavior, and victimization will be used in this class. Assessment techniques are a major part of the class. Prerequsite: Soc 100
Prereqs: SOC 10000 with min grade of D-

SOC 46000 Field Experience In Gerontology

Class:2 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Internship, Malpractice-Criminal Justice
Supervised volunteer field experience in a gerontological setting. Intended as an opportunity for practical experience in an organization providing services to older adults, where theoretical concepts can be applied with skills and techniques for dealing with older adults can be developed.
Prereqs: SOC 43000 with min grade of D-

SOC 49100 Topics In Sociology

Class:0-6 Lab:0 Credit:1-6
Attributes: Variable Title
Variable titles.

SOC 49300

Class:0 Lab:0 Credit:1-3
Attributes: Variable Title

SOC 51400 Racial And Cultural Minorities

Class:3 Lab:0 Credit:3
America's minority groups; immigration; interracial and intercultural conflicts; assimilation.
Prereqs: SOC 10000 with min grade of B-

SOC 52500 Social Movements

Class:3 Lab:0 Credit:3
Origins and developmental stages of revolutionary and reform movements and communitarian societies; relation between social structure and political attitudes; personality needs and affinity for social and political ideologies.
Prereqs: SOC 10000 with min grade of B-

SOC 53000 Political Sociology

Class:3 Lab:0 Credit:3
Analysis of the social and social psychological sources of routine political participation such as voting and interest group

activity and non-routine political action such as protest movements and revolution; the organization of power at the community, national and international level; and political ideology.
Prereqs: SOC 10000 with min grade of B-

SOC 53100 Community Organization

Class:3 Lab:0 Credit:3
Analysis of the local community in terms of its institution- al structure, relationships among institutions, political and economic power relationships, and the role of voluntary organizations and interest groups.
Prereqs: SOC 10000 with min grade of B-

SOC 57000 Sociology Of Education

Class:3 Lab:0 Credit:3
Analysis of the American public school as a social organization. Includes: interrelations among community power structure, social stratification, and the school; the roles of superintendent, principal, and teacher in community and school; the classroom as a social system; student culture; and teaching as a profession.
Prereqs: SOC 10000 with min grade of B-

SOC 57800 Disability and Society

Class:3 Lab:0 Credit:3
This course analyzes the phenomenon of disability from a sociological grame of reference. The course focuses on the role of language and social roles, the effect of public policy upon individuals with disability, the portrayal of disabiilty in popular culture, the role of technology on the lives of individuals with disability and the challenges confronting our society and its treatment of disability. Students will experience the impact of disability on individuals through an array of educational activities. The structure of the course is designed to facilitate direct contact by students with individuals with a disability. The course is also designed to enhance students learning through various readings, assignments, and videos. The students should have regular and consistent access to the internet and should have the basic skills to navigate the Blackboard site for the course, as well as Word processing software.

SOC 59000 Individual Research Problems

Class:0-3 Lab:0 Credit:1-3
Attributes: Variable Title
This course requires consent of the instructor. (May be repeated for credit.) Individual research or reading in an area of sociology under a sociology department staff member. Does not include thesis work.

SOC 59100 Selected Topics In Sociology

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
May be repeated for a maxiumum of six credit hours.
Prereqs: SOC 10000 with min grade of B-

SPAN 10100 Spanish Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1, TransferIN
Introduction to Spanish.

SPAN 10200 Spanish Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2, TransferIN
Continuation of SPAN 101.
Prereqs: SPAN 10100 with min grade of C-

SPAN 10600 Spanish For Business I

Class:3 Lab:1 Credit:3
A Spanish for Special Purposes course. Realistic situations and specialized vocabulary that business and finance professionals need to communicate in the course of daily work. Opportunities to apply grammatical structures in a variety of practical contexts. Highlights on Hispanic customs and practices relevant to business professionals in their intractions with Spanish speakers.

SPAN 10700 Spanish For Business II

Class:3 Lab:1 Credit:3

A Spanish for Special Purposes course. A continuation of SPAN 106. Realistic situations and additional specialized vocabulary that business and finance professionals need to communicate in the course of daily work. Further opportunities to apply grammatical structures in a variety of practical contexts. Highlight on more Hispanic customs and practices relevant to business professionals in their interactions with Spanish speakers.

Prereqs: SPAN 10600 with min grade of D-

SPAN 11000 Spanish For Health Care Providers

Class:3 Lab:0 Credit:3

A Spanish for Special Purposes course. Basic terminology for health care professionals. Practice in Spanish communication in assessment and intervention settings with patients/families. General medical history, and symptoms are covered as well as special individual topics. Practice in language skill development in health history interviews.

SPAN 19000 Special Topics in Spanish

Class:0-3 Lab:0-6 Credit:1-3

Attributes: Variable Title

Special topics related to Spanish and to Spanish-speaking cultures and literatures. Variable title. This course may be repeated for credit, providing the topics are different.

SPAN 20100 Spanish Level III

Class:3 Lab:1 Credit:3

Attributes: Foreign Language 3, TransferIN

A conversational approach to the cultures of Spain and South America with a review of Spanish language skills as needed.

Prereqs: SPAN 10200 with min grade of C-

SPAN 20200 Spanish Level IV

Class:3 Lab:1 Credit:3

Attributes: Foreign Language 4, TransferIN

Continuation of SPAN 201 and the presentation of intellectual readings.

Prereqs: SPAN 20100 with min grade of C-

SPAN 20600 Practicum In Spanish

Class:1-3 Lab:0 Credit:1-3

Directed practice in Spanish in settings that offer contact with the Hispanic community.

SPAN 23000 Contemporary Spanish American Literature In Translation

Class:3 Lab:0 Credit:3

Attributes: Literature

Reading and discussion of selected masterpieces of 20th century Latin American prose fiction and essays in translation. Emphasis on works written after World War II. Knowledge of Spanish not required.

SPAN 26100 Spanish Composition

Class:3 Lab:0 Credit:3

The essentials of Spanish grammar as applied in composition.

Prereqs: SPAN 20200 with min grade of D-

SPAN 29000 Special Topics in Spanish

Class:0-3 Lab:0-6 Credit:1-3

Attributes: Variable Title

Special topics related to Spanish and Spanish-speaking cultures and literatures. Variable title. This course may be repeated for credit, providing topics are different.

SPAN 30400 Reading from the Hispanic World

Class:3 Lab:0 Credit:3

This course will focus on the development of interpretive skills in Spanish by emphasizing reading, listening strategies,

analytical skills and knowledge about the prespectives, practices, and products of the Hispanic world.
Prereqs: SPAN 20100 with min grade of C-

SPAN 30600 Spanish Grammer

Class:3 Lab:0 Credit:3
This course integrates the four basic language skills (reading, writing, listening and speaking) into a review of the major points of Spanish grammar from SPAN 101 through 202 plus practice of additional grammar points. The objectives of this course are to increase the students accuracy in the four basic language skills through aquisition of vocabulary, application of grammar rules, and use of the coherent structures.
Prereqs: SPAN 20200 with min grade of C-

SPAN 30700 Commercial Spanish

Class:3 Lab:0 Credit:3
This course will provide students with the fundamentals of effective expression and communication as these apply to Spanish business situations in particular. It will concentrate on commercial vocabulary, reading, writing, and speaking as related to international business.
Prereqs: SPAN 20200 with min grade of D-

SPAN 31300 Spanish For Spanish Speakers I

Class:3 Lab:0 Credit:3
A prerequisite of a placement test to determined native speaking ability in Spanish. Not open to students who have had SPAN 365 and SPAN 261. The presentation of the structure and phonology of Spanish in Spanish for those who come from native-speaking backgrounds but who require the formal training. Grammar, composition, and standard Spanish fluency.

SPAN 31400 Spanish for Spanish Speakers II

Class:3 Lab:0 Credit:3
A continuation of SPAN 313 with the presentation of levels of Spanish speech, intellectual readings and compositions, grammar problems.
Prereqs: SPAN 31300 with min grade of D-

SPAN 36500 Spanish Conversation

Class:3 Lab:0 Credit:3
Intensive practice in Spanish conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Practice in pronunciation.
Prereqs: SPAN 20200 with min grade of C-

SPAN 37300 Spanish Translation

Class:3 Lab:0 Credit:3
A introduction to the principles of translation. Practice in translation from Spanish to English and vice versa. Selected, graded materials from simple to moderate difficulty, illustrating a variety of styles. Acquaintance with reference materials concerning Spanish and English and translations.
Prereqs: SPAN 26100 with min grade of D- OR SPAN 31300 with min grade of D-

SPAN 39000 Special Topics in Spanish

Class:0-3 Lab:0-3 Credit:1-3
Attributes: Variable Title
Special topics related to Spanish and to Spanish-speaking cultures and literatures. Variable title. This course may be repeated for credit, provided the topics are different.

SPAN 40500 Introduction To Spanish Literature I

Class:3 Lab:0 Credit:3
Attributes: Literature
Introduction to the periods of Spanish literature from the beginning through the 18th century. Reading and discussion of representative works. The rudiments of literacy criticism.

SPAN 40600 Introduction To Spanish Literature II

Class:3 Lab:0 Credit:3
Attributes: Literature
Introduction to the periods of Spanish literture from the 18th century to the present. Reading and discussion of representative works. The rudiments of literary criticism.

SPAN 40800 Language Practicum In Business

Class:3 Lab:0 Credit:3
Attributes: Experiential Learning, ExL-Practicum
The course requires classification of 5 or higher, GPA 2.5, and departmental approval. (May be repeated once for credit if experience is different.) The course will consist of actual on-the-job experience in international corporations, industry, commerce, government, or health and social agencies where Spanish is used. The course is designed to expose students to their chosen vocational field.
Prereqs: SPAN 26100 with min grade of B- AND SPAN 30700 with min grade of B- AND SPAN 36500 with min grade of B-

SPAN 41300 Culture Of Spanish-Speaking Americans

Class:3 Lab:0 Credit:3
An introduction to the cultural heritage and customs of groups of Spanish-speaking Americans, such as Mexican-Americans, Puerto-rican Americans, Cuban Americans. The nature of the social processes, points of interference between cultures. Historical and geographical perspectives of Spanish-speaking Americans.

SPAN 41400 Literature Of Spanish Speaking Americans

Class:3 Lab:0 Credit:3
Attributes: Literature
The study of the literature of Chicano and Puerto Rican authors. Poetry, plays, short stories and novels presented in survey form so as to cover fairly themes from each Spanish-speaking population segment in contemporary American life. Intermediate knowledge of Spanish is needed because of dialecticism in many of the contemporary works.

SPAN 42600 Spanish Linguistics

Class:3 Lab:0 Credit:3
This course wil serve as in introductory course to Spanish linguistics. Prerequisites: 12 credit hours beyond SPAN 202

SPAN 43500 Spanish American Literature To Modernism

Class:3 Lab:0 Credit:3
Attributes: Literature
The study of the development of Spanish American literature from the early chronicles to the end of the 19th century with consideration of the pre-hispanic background.
Prereqs: SPAN 20200 with min grade of D-

SPAN 43600 Spanish American Literature From Modernism To Present

Class:3 Lab:0 Credit:3
Attributes: Literature
A continuation of SPAN 435. The study of the development of Spanish American literature beginning with the Modernist period to the present.
Prereqs: SPAN 20200 with min grade of D-

SPAN 45100 Spanish Civilization

Class:3 Lab:0 Credit:3
The study of modern Spanish life with regard to the social institutions and customs. Lectures in the language.

SPAN 46100 Intermediate Spanish Composition

Class:3 Lab:0 Credit:3
A continuation of SPAN 261. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary.
Prereqs: SPAN 26100 with min grade of D- OR SPAN 31300 with min grade of D-

SPAN 46500 Intermediate Spanish Conversation

Class:3 Lab:0 Credit:3

Continued practice in Spanish conversation, and the study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary culture as a basis for their conversations.

Prereqs: SPAN 36500 with min grade of D- OR SPAN 31300 with min grade of D-

SPAN 47300 Intermediate Spanish Translation

Class:3 Lab:0 Credit:3

The continuation of SPAN 373 to include more extensive and more difficult translations. Also, a presentation of theoretical concepts concerning translation, and an orientation to research materials for translation purposes.

Prereqs: SPAN 37300 with min grade of D-

SPAN 48100 SPANISH CULTURE

Class:3 Lab:0 Credit:3

The development of the cultural life of the Spanish people, as reflected in the geography, history, music, art, and architecture of Spain. Lectures in Spanish.

Prereqs: SPAN 20200 with min grade of D- OR SPAN 31300 with min grade of D-

SPAN 48200 Latin American Civilization

Class:3 Lab:0 Credit:3

An outline of Latin American history; the cultural heritage from Spain and from the pre-Spanish civilizations; the intellectual, social, and cultural progress of the Latin American countries. Lectures in the language.

Prereqs: SPAN 20200 with min grade of D- OR SPAN 31300 with min grade of D-

SPAN 49000 Topics In Spanish

Class:3 Lab:0 Credit:3

Attributes: Variable Title

May be repeated for credit. Variable title.

Prereqs: SPAN 20200 with min grade of D-

SPAN 51100 Advanced Spanish Conversation

Class:3 Lab:0 Credit:3

Additional practice in speaking and understanding Spanish. Talks based on material given in class.

Prereqs: SPAN 46500 with min grade of B-

SPAN 51500 Advanced Spanish Composition

Class:3 Lab:0 Credit:3

Additional training in writing Spanish.

Prereqs: SPAN 26100 with min grade of B-

SPAN 54100 Spanish Literature Of The Golden Age

Class:3 Lab:0 Credit:3

A survey of Spanish literature from 1500 to 1681. Reading and discussion of representative prose, dramatic and poetic works. Lectures and supplemental readings on literary criticism and on various aspects of the period useful to an understanding of the literature it produced.

Prereqs: SPAN 40500 with min grade of B-

SPAN 54400

Class:3 Lab:0 Credit:3

SPAN 55200 Spanish American Literature From 1900-1970

Class:3 Lab:0 Credit:3

A survey of a number of representative works, as well as excerpts from several others.

Prereqs: SPAN 43600 with min grade of B-

SPAN 55300 Spanish Amreican Literature from 1970-Present

Class:3 Lab:0 Credit:3

A survey of Spanish American literature from 1970 to the present. Readings and discussion of a number of representative works as well as excerpts from several others.
Prereqs: SPAN 43600 with min grade of B-

SPAN 59000 Directed Reading In Spanish

Class:1-4 Lab:0 Credit:1-4
Attributes: Variable Title
May be repeated for credit.

SRCT 10100 Serbo-Croatian Level I

Class:3 Lab:1 Credit:3
This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

SRCT 10200 Serbo-Croatian Level II

Class:3 Lab:1 Credit:3
This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.
Prereqs: SRCT 10100 with min grade of D-

STAT 13000 Statistics And Contemporary Life

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Math or Statistics, Gen Ed-Quantitative Reasoning, General Education
Introduction to statistical ideas and their impact on various aspects of modern life. Topics will include the organization, manipulation, and understanding of numerical data, the art of data presentation, interpretation of statistical information as presented in the media, the concept of randomness in gambling and lotteries, and some discusson of statistical fallacies.

STAT 30100 Elementary Statistical Methods I

Class:3 Lab:0 Credit:3
A basic introductory statistics course with applications shown to various fields and emphasis placed on assumptions, applicability, and interpretations, or various statistical techniques. Subject matter includes frequency distributions, descriptive statistics, elementary probability, normal distribution applications, sampling distribution, estimation, hypothesis testing and linear regresion.
Prereqs: MA 14700 with min grade of C- OR CLM with a min test score of 076 OR MA 15300 with min grade of C-

STAT 31500 Introduction To Probability And Statistics

Class:3 Lab:0 Credit:3
Probability theory with a short-introduction to statistics. Not enough statistics to serve as a preparation for a second course in statistics.

STAT 33001 Biostatistics

Class:3 Lab:0 Credit:3
This course covers the fundamental concepts of statistical methods and their applications to biology. The following topics will be included: experimental and sampling designs; descriptive statistics; basic probability or probability distribution; test of hypothesis; one-way analysis of variance; linear regressuib. Emphasis wil be placed on the collection, organization, analysis and interpretatation of data from biological exoeriments and observations.

STAT 34500 Statistics

Class:3 Lab:0 Credit:3
Topics from exploratory data analysis and inferential statistics will be covered, along with a necessary introduction to probability. Statistical and probabilistic simulations will be used to enhance students' understanding of randomness and variation. Extensive use of a statistical computer package will be required.
Prereqs: MA 16400 with min grade of C-

STAT 40001 Statistical Computing

Class:3 Lab:0 Credit:3

Attributes: Experiential Learning, ExL-Design Projects
The purpose of this course is to teach fundamental computing skills required by practicing statisticians. Students will use statistical software for analysis and model building of real world data. Topics include descriptive statistics, inferential statistics, model building, designing and performing simulation experiments, writing codes to perform common statistical tasks.
Prereqs: STAT 30100 with min grade of C- OR STAT 34500 with min grade of C-

STAT 49000 Topics In Statistics For Undergraduates

Class:0-5 Lab:0 Credit:1-5
Attributes: Variable Title
Supervised reading and reports in various fields. Open only to students with the consent of the department.

STAT 50100 Experimental Statistics I

Class:3 Lab:0 Credit:3
Primarily intended for students who have not had calculus. Not open to students in mathematics, statistics or computer science. Credit should not be allowed in more than one STAT 301,501,or 511.) Fundamental concepts and methods of statistics for students interested in the analysis of experimental data. Subjects include descriptive statistics, basic probability theory, normal distribution, tests of hypotheses and confidence intervals for normal and Bernoulli populations, contingency tables, tests of goodness-of-fit, linear regression and nonparametric test.
Prereqs: MA 15300 with min grade of C- OR MA 15900 with min grade of C-

STAT 50200 Experimental Statistics II

Class:3 Lab:0 Credit:3
Continuation of STAT 501. Subject matter includes multiple regression and analysis of variance, with emphasis on statistical inference and applications to various fields.
Prereqs: STAT 50100 with min grade of C-

STAT 50800

Class:3 Lab:0 Credit:3

STAT 51100 Statistical Methods

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, poison, hypergeometric distributions; one way analysis of variance; contingency tables; regression.
Prereqs: MA 26100 with min grade of C-

STAT 51200 Applied Regression Analysis

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.
Prereqs: STAT 51100 with min grade of C- OR STAT 51700 with min grade of C-

STAT 51300 Statistical Quality Control

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
A strong background in control charts including adaptations, acceptance plans, sequential analysis, statistics of combinations, moments and probability distributions, applications.
Prereqs: STAT 51600 with min grade of C- OR STAT 51100 with min grade of C-

STAT 53200 Elements Of Stochastic Processes

Class:3 Lab:0 Credit:3
Attributes: Engr Tech Elective
A basic course in stochastic models, including discrete and continuous time Markov Chains and brownian motion, as well as an introduction to topics such as Gaussian processes, renewal processes, replacement, and reliability problems.

Prereqs: STAT 51900 with min grade of C-

SWAH 10100 Swahili Level I

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 1
Introduction to Swahili.

SWAH 10200 Swahili Level II

Class:3 Lab:1 Credit:3
Attributes: Foreign Language 2
Continuation of SWAH 101 (Swahili Level I).

TECH 50100 Internship in Technology

Class:0-3 Lab: Credit:0-3
Practical work experience in technology-related positions in business, government and industrial organizations, designed to combine graduate study with work experience directly related to student's plan of study.

TECH 50200 Design, operation and management of smart energy grid.

Class:3 Lab:0 Credit:3
Study of operating principles and models of smart grid components, including distributed energy sources and distribution feeder components, communications infrastuctures for smart grid operation, advanced metering infrastructure, advanced control methods and demand and response management. Other topics include the distribution feeder analysis, impact of smart grid component integration on grid operation and the evaluation of grid reliability. Prerequisite: Graduate student status in the College of Technology or in another school (with apporpriate objectives and preparation) and leveling courses may be required based on the student's undergraduate degree.

TECH 57800 Energy Resource Management

Class:3 Lab:0 Credit:3
This course will concentrate on four major components of Energy Resouce Management: Supply, Demand, Regulation and Environment. Energy audits, energy economics, metering, performance contracting and financing with demand response, measurement, verification, equipment applications and systems will be studies. An overview of alternative energy as well as the latest energy efficient lighting technology will be given. The quantitive analysis of water, air gas electricity and steam (WAGES) will be given. This course presents the key concepts and methods of energy efficiency. It explores how energy is converted into useful services and the role of increased efficiency in providing those services less energy. The different forms of efficiency improvements and conservations are introduced, drawing upon examples in transportation, buildings and industry. Case studies of energy auditing, energy purchasing and conservation, maintenance and operation issues, code and standards applied in enervy resource management will be given. Graduate students status or senior status with instructor approval. Leveling courses may be required based on the studnets undergraduate degree.

TECH 57900 Sustainabiltiy Engineering

Class:3 Lab:0 Credit:3
The course will introduce the student to Sustainability Engineering and technologies that are used in the managing of organizational operations. Graduate student status or Senior student status with instructor approval. Leveling courses may be required baded on student undergraduate degree.

TECH 58100 Workshops in Technology

Class:0-8 Lab:0 Credit:0-8
Attributes: Variable Title
Course topics will vary.

TECH 59800 Directed MS Project

Class:1-3 Lab:0 Credit:1-3
A formal investigation of a particular problem under the guidance of the advisory committee. Enrollment during at least two consectuive terms for a total of 3 credits is required.

TECH 64600 Analysis of Research in Industry and Technology

Class:3 Lab:0 Credit:3

Analysis of research and evaluation of research reports. Emphasis on understanding the application of fundamental statistical methods in design and interpretation of research findings in industrial, technical and human resource development environments.

TECH 69500 Graduate Professional Practice

Class:0 Lab:0 Credit:0

Advanced professional experience in Technology. The experience is coordinated by the major professor with cooperation of a participating employer. Students submit a summary report and complete 120 hours per credit hour. Admissions by consent of instructor. Special fees may apply.

THTR 13600 Rehearsal And Performance I

Class:0 Lab:2 Credit:1

Requires consent of instructor. May not be taken concurrently with THTR 168 ,336, or 368. Repeatable once for credit. Study and practice of rehearsal techniques of stage performance. Students will be assigned to acting or other rehearsal activities during semester's major production.

THTR 13800 Acting I

Class:3 Lab:1 Credit:3

Attributes: TransferIN

Student experientially learns basic acting skills through a structured series of exercises. Emphasis is on developing and controlling concentration, creation of basic realities, improvisation. May be repeated for credit with consent of instructor.

THTR 16800 Theatre Production I

Class:0 Lab:2 Credit:1

This course requires consent of instructor. May not be taken concurrently with THTR 136, 336, or 368. Repeatable once for credit. Study and application of aspects of theatre production. Practice in various production skills. Students will be assigned to positions in semester's major production.

THTR 20100 Theatre Appreciation

Class:2 Lab:2 Credit:3

Attributes: Gen Ed-Humanities, Gen Ed-Humanistic/Artistic, General Education, TransferIN

Understanding and appreciation of the theatre's role in the modern world, including a survey of dramatic structure and analysis, and the functions of the actor, director, designer, and critic related to current stage production. Laboratory work includes attendance and discussion of the dramatic presentations on campus.

THTR 23800 Acting II

Class:3 Lab:1 Credit:3

Introduction to the Stanislavski Method through scene work. The student will present four to eight scenes of increasing complexity, beginning with modern, realistic drama. Textual analysis, advanced game work and improvisation. May be repeated for credit with instructor consent.

THTR 25500

Class:1 Lab:6 Credit:3

THTR 29000 Special Topics in Theatre

Class:1-3 Lab:0 Credit:1-3

Attributes: Variable Title

Topics will vary.

THTR 33600 Rehearsal And Performance II

Class:0-2 Lab:0-4 Credit:1

Attributes: Variable Title

This course requires instructor consent. May not be taken concurrently with THTR 136, 168, or 368. Repeatable once for credit. Advanced study and practice of rehearsal techniques of stage performance. Students will be assigned to acting or other rehearsal activities during semester's major production.

THTR 35500

Class:3 Lab:0 Credit:3

THTR 36800 Theatre Production II

Class:0 Lab:2 Credit:1
Attributes: Variable Title
This course requires instructor consent. May not be taken concurrently with THTR 136, 168, or 336. Repeatable once for credit. Advanced study and application of aspects of theatre production. Practice in various productions skills. Students will be assigned headships in various divisions of duties during the semester's major production.

THTR 39000

Class:0 Lab:0 Credit:1-3
Attributes: Variable Title

THTR 49000 Special Topics in Theatre

Class:1-3 Lab:0 Credit:1-3
Attributes: Variable Title
Topics will vary.

THTR 53400

Class:2 Lab:2 Credit:3

THTR 59000 Directed Study Of Special Theatre Problems

Class:0 Lab:0 Credit:1-3
Attributes: Variable Title
This course requires instructor consent. May not be taken concurrently with THTR 136, 168, or 336. Repeatable once for credit. An individualized and intensive study of any aspect of theatre required by the student's plan of study.

URDU 10100 Urdu Level I

Class:3 Lab:1 Credit:3
This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and developement as well as a service to the community.

URDU 10200 Urdu Level II

Class:3 Lab:1 Credit:3
This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.
Prereqs: URDU 10100 with min grade of D-

WOST 12100 Introduction to Women's Studies

Class:3 Lab:0 Credit:3
Not open to students with credit in GS 121 An introduction to a women's studies perspective in various academic disciplines. Emphasis on the socialization process of women, the history and literature of women, the politics and theory of the women's rights movement, and the changing role of women in society.

WOST 20800 Nutrition in Women's Health

Class:3 Lab:0 Credit:3
Attributes: Gen Ed-Wellness Education, General Education
Course does not meet nutrition competency requirements for Nursing, Early Childhood Education or Hospitality and Tourism Management Majors. Not open to students with credit in F&N 208. Exploration of women's health issues with emphasis on nutrition. Review of current research in normal and preventive nutrition throughout the lifecycle. Focus on women as individuals and on those who counsel and educate women.

WOST 23200

Class:0 Lab:0 Credit:0
Attributes: Literature, Variable Title

WOST 23600 Mothers And Daughters In Literature

Class:3 Lab:0 Credit:3

Attributes: Literature
Not open to students with credit in ENGL 236. Course acquaints students with a new body of literature by women. Students explore mother-daughter relationships as presented in this literature to enhance their understanding of feminist approaches to life.
Prereqs: ENGL 10400 with min grade of D-

WOST 32000 By And About Women

Class:3 Lab:0 Credit:3
Not open to students with credit in ENGL 320. This literature course will emphasize significant texts by major women writers such as Atwood, the Brontes, Cather, Chopin, Dickinson, Eliot, Glaspell, Hurston, Jewett, Lessing, Mansfield, Morrison, Oates, Rich, and Woolf. Although the class will study mainly 19th and 20th century English and American writers, the readings will not be restricted to these. In addition, the readings will also include a variety of literary genres-novel, short fiction, poetry, and drama.
Prereqs: ENGL 10400 with min grade of D-

WOST 32400 International Women's Literature

Class:3 Lab:0 Credit:3
Attributes: Literature
Not open to students with credit in ENGL 324. Course presents an international perspective on women's social, political, economic and imaginative lives. It focuses on the literary efforts of women to question, challenge, and examine the conditions affecting their lives. The major emphasis will be on global literatures from Africa, the Americas, Asia, and the Middle East. This course is cross-listed as ENGL 324.

WOST 34000 Literature By Women Of Color

Class:3 Lab:0 Credit:3
Attributes: Literature
This course focuses on literature written in English by women of color living in the United States. Writers included are Africa-American, Native-American, Asian-American, and Latin/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL/WOST 340 examines some of the cultural differences among these groups, as reflected in the literature. This course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures. This course is cross-listed as ENGL 340. Not open to students with credit in ENGL 340.
Prereqs: ENGL 10400 with min grade of D-

WOST 35000 Social Psychology Of Marriage

Class:3 Lab:0 Credit:3
Not open to students who have had CDFS 350 or SOC 350. Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society.
Prereqs: SOC 10000 with min grade of D- OR SOC 31200 with min grade of D-

WOST 45000 Sex Roles In Modern Society

Class:3 Lab:0 Credit:3
Not open to students with credit in SOC 450. A critical examination of the complementary roles of men and women with particular attention to problems of role adjustment in the contemporary United States. The neo-feminist movement and countermovements. Role coflicts and adjustments in such areas as family, education, employment, and the political area.
Prereqs: SOC 35000 with min grade of D-

WOST 47000 Women In The Media

Class:3 Lab:0 Credit:3
Not open students with credit in COM 470. Focusing on the contributions made by women in newspaper, television, film, and performance, this course will explore how women are shaping societal and cultural values.
Prereqs: COM 11400 with min grade of D- OR COM 20100 with min grade of D- OR WOST 12100 with min grade of D-

WOST 49000 Topics In Women's Studies

Class:0-6 Lab:0-6 Credit:1-6

Attributes: Variable Title

Variable credit, variable title. May be repeated for credit if topics vary.

XLST 00100

Class:3 Lab:0 Credit:3

XLST 00200

Class:3 Lab:0 Credit:3